

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

THE MARYLAND FARMER:

DEVOTED TO

Agriculture, Horticulture, Rural Economy & Mechanic Arts.

Vol. 4. BALTIMORE, FEBRUARY 1, 1867. No. 2.

FERTILIZER FOR COTTON.

An esteemed correspondent at Smithfield Depot, N. C., writes to us as follows:

"Believing as I do that you are interested in the welfare of your subscribers, I come to you confidently knowing you will give me the advice desired. I have planted cotton this year, but the season was unfavorable, seed bad and hands did not work as formerly, that I am almost discouraged, but I am going to try again. I used Mapes' Phosphate of Lime last year but did not succeed very well. Will you be good enough to tell me which you would use for cotton—the Peruvian, Pacific, or Peruvian and Phosphate mixed, or any other that you can recommend, and the quantity to the acre—and where I can buy to the best advantage?"

We are always happy to respond to the enquiries of all our friends to the best of our ability. It would of course be invidious in us to recommend the commercial fertilizer of one manufacturer over another, but it is strictly within our province to answer in a different manner all the points embraced in the letter above quoted. In the first place, then, the very best guide for the use of a fertilizer is found in the constituent parts of the plant to be fertilized. This knowledge is obtained by an analysis of the ashes of the plant itself. The most careful analyses of this kind we have met with are those which were made by Professor Jackson of Boston, and which are to be found in the Report of the Agricultural Department at Washington for 1857. In the article alluded to Professor Jackson, acting under instructions from the Patent Office, of which the Agricultural Department was then a branch, determined not only the chemical ingredients contained in the best cotton soils, both Sea Island and Upland, but also the various constituents entering into the composition of the plant, in its stalks, leaves, seeds, and in the fibre of the cotton itself. The result was as follows:

Analysis of the stalk, leaves, cotton fibre, and seed of a Sea Island Cotton Plant, after being reduced to ashes:

	STALK.	LEAVES.	FIBRE.	SEED.
	25 gr. of the ashes of seed.	25 gr. yield- ed.	15 grains yielded.	41 grains yielded.
Silica.....	1.150	1.540	0.240	0.160
Carbonic acid.....	5.000	3.800	3.500	1.200
Chlorine.....	0.603	2.220	1.100	0.450
Sulphuric.....	0.412	1.065	0.824	0.872

Phosphoric acid.....	2.239	2.795	1.733	10.640
Lime.....	6.254	7.275	2.641	1.850
Magnesia.....	1.100	0.200	0.200	7.860
Potash.....	2.851	3.522	3.628	12.340
Soda.....	3.351	1.408	0.974	4.472
Peroxyde of Lime.....	0.940	0.675	0.000	0.000
Carbon.....	0.000	0.000	0.230	0.000
Loss.....	0.000	0.000	0.000	1.376
	25.000	25.000	15.070	41.200

Upon the above, Professor Jackson remarks:

"By these analyses we learn the nature and proportions of the mineral ingredients which the different parts of the cotton plant drain from the soil, and which must be preserved in the soil to render it capable of producing this crop."

"Now, since the seeds weigh nearly four times as much as the cotton fibre in each plant, it is evident that they are very rich in saline matters—phosphates of magnesia and lime,—and in the alkalies—(potash and soda,) they form one of the most valuable fertilizers to return to the soil. If the seed be sold and sent away for the manufacture of oil, the oil-cake still containing all the saline matters may be returned as a manure for cotton-fields, and it will be found to be one of the best fertilizers, not only for that crop, but also for corn, which requires a large supply of the phosphates and alkalies."

Of the most successful cotton-growers of Georgia, Mr. David Dickson, reasoning from similar principles, has used, with great advantage, in the production of cotton, a formula which we do not think can be well improved unless it were to increase the amount of potash he prescribes. In a communication addressed by him to the Editor of the *South Countryman*, Mr. Dickson says:

"I have used guano twelve years. * * * *
I will give you my plan:—Use it free for cotton, say in the following proportions:

100 lbs. of the best Peruvian Guano,
75 lbs. of Phosphatic Guano,
1 bushel of Salt,
1 bushel of Ground Plaster, thoroughly mixed, with 5 per cent. of Potash."

In a more recent communication to the *Southern Cultivator*, Mr. Dickson gives a somewhat different formula. The change he has made is to substitute 100 lbs. of dissolved Bones for the 75 lbs. of Phosphatic

Guano he formerly used. This, in our opinion, is an improvement. Another change he has made is to leave out the 5 per cent. of Potash in the Ground Plaster. With all due respect to so experienced a planter, we think in this he has erred. The analyses given above show how largely Potash enters into the composition of the Cotton Plant, and how important it is to keep up an adequate supply in the soil.

Mr. Dickson regards the above as sufficient for one acre of cotton. He expended before the war thousands of dollars annually in the purchase of these fertilizers, and claims to have realized, by means of their use, a clear profit of 100 per cent.

But he did not depend upon fertilizers only. He left the cotton stalks to rot on the ground for the sake of the large amount of alkalies and saline matters they return to the soil, and he also manured his cotton fields, as recommended by Professor Rogers, with the refuse cotton seed. By these means his lands yearly became richer, for it was not the cotton fibre that exhausted the soil, but the stalks and leaves and seeds, and these were returned to it—with the addition of one hundred and seventy-five pounds of guano to the acre mixed, with salt, plaster and potash.

We have thus answered, fully, we trust, the interesting questions put to us by our correspondent. The mixture of ingredients recommended by Mr. Dickson was compounded, to his order, by the parties in Baltimore city; but any respectable dealer in manipulated guano would, we doubt not, make up an article equally satisfactory. At the present price of cotton, and with the favorable prospect there now is of a relief in whole or in part from the very onerous cotton tax, we should think that Cotton Planters would find it to their advantage to bring up their soils to the highest point of fertility of which they are capable. Their great trouble lies in their disorganized labor-system and the difficulty in bringing the hands down to steady, regular work. Any thing, therefore, which increases the acreable product of cotton reduces the number of field-hands required, for if one bale of cotton to the acre can be raised on lands which previously raised but half that quantity, it follows that but one-half the customary amount of land would have to be cultivated to produce the same amount of crop. The only pressure, then, upon the planter would be in picking time. But these are matters of which each planter can judge best for himself.

TESTING GRASS SEED.—It is recommended to test grass seeds, especially clover, before sowing, by putting seeds, previously counted, in a small cup filled with good soil. Cover the seeds a half inch deep, and keep the soil moist and warm. In a few days the proportion of good seeds may be determined.

FARMERS' LIBRARIES.

A long experience of the value of the suggestion induces us to impress upon every one living permanently in the country the importance of forming each for himself a small but well selected library.—In the farmer's household especially, books will be found of great service, not only as pleasant reading but also for the practical hints they so frequently furnish. The higher or lower intelligence of our rural population may be readily measured by their fondness for reading and their desire to gratify it. The more knowledge is disseminated the clearer will be the grasp and the more perfect the comprehension of questions, both social and political, that are vital to the well being of the republic, whilst in agricultural matters the progress will be more rapid by the correction of errors in management and by the execution of plans of improvement maturely considered and intelligently carried out. The remark is as trite as it is true, that the more thoroughly knowledge is diffused throughout a State the greater will be the power and influence she wields, not only within, but outside of her own border, and the more certain and permanent will be her materi prosperity. The new system of public education which Maryland has recently adopted, faulty as it is in some respects, has much to commend it to popular favour, and if committed to the charge of proper officials is well calculated to extend the benefit of a fair education to those classes which stand most in need of it, and thus promote the general welfare. But although a great reformation in the matter of education may, by this means, be gradually effected, a number of years must pass before the State can reap the full advantage of it. It is the rising generation that is the recipient of her bounty and it is the next and ensuing generations that will experience whatever beneficial results may accrue from the exercise of that bounty. We can however, even at this day, assist in forwarding the good work, and as a means to this end nothing could be better than the formation of a good library of useful and miscellaneous works in every farmer's household. Not only should this be done in the interest of the younger branches of the family but also in that of the elder members. "He who possesses good books possesses good friends"—friends too, who amuse while they instruct; entertain while they stimulate and expand the mind. In a country life it is this mental food that is so eminently needful, and there is no place where the cheerful relaxation of books operates so healthfully as upon the farm.—In many parts of the State families are isolated from each other by distance, or by uncongeniality of disposition, and at some seasons of the year by almost impassable roads. In either case there can be but little social intercourse. The city is rarely visited, and

even when this notable event does occur it is because of business affairs demanding personal attention.—Restricted thus almost exclusively to the farm itself life passes a monotonous round. The body is overworked whilst the mental powers being but little exercised lie comparatively dormant. The result is that nature avenges herself. The physical faculties may be vigorous but the mental faculties suffer in proportion to the extent they are neglected, and the wise balance between the two that nature ordains should be observed in the perfect man is inevitably lost.—The ultimate consequences are often disastrous.—Take any of the statistical reports of the superintendents of insane hospitals and look at the revelations they make. They tell us, and they substantiate the fact by an array of figures that does not admit of dispute, that the larger proportion of insane in our asylums are from the rural districts; that these cases of insanity occur chiefly among small farmers and labourers, and their offspring—and medical men assert that the primary causes of the malady is want of mental occupation combined with overwork. Our larger land owners constitute as fine and intelligent and therefore as healthy a body of men as can be found any where, and for these reasons—that their minds are cultivated, that they seek not unfrequently the society of men and of books, and that they are not subjected to any inordinate physical overstrain. It becomes us then to assist by every means in our power in promoting whatever tends to educate the middle and lower classes of the rural population, acting on the well founded conviction that “the elevation of the individual is that of the community, and the elevation of the community is that of the State.” In cases of this kind it is not probable that any concert of action can be had. The good that is done must therefore be undertaken individually. There is many a well-to-do farmer who has elementary books of a simple yet pleasing character which he might bestow as a gift on his poorer neighbour. There is many a farmer in moderate circumstances who would find it to his advantage to supplement his stock of groceries and dry goods by ordering at the same time a few books for his own use and for family reading. There are many country gentlemen who have choice books, they would cheerfully lend to those who could not afford to buy such, but in whom a taste for reading had been already stimulated by the perusal of such other books as were within their reach. It needs but a beginning. The rest will follow as a matter of course. The pursuit of knowledge is self stimulating. Increase of appetite grows by what it feeds on. There are dullards of course every where. But there are also every where those who having once mastered the rudiments of education would only be too happy to find a friend willing to assist them in

advancing further. To the family, of a winter's evening, we know of nothing better calculated to make many a vacant hour enjoyable that would otherwise be passed in sullenness or apathy or bitterness. Every farmer therefore should aim to have some sort of a library. It need not be large, for the number of really good books is not many. It need not be costly, for there are cheap editions of those books that are best adapted to meet his wants, and where particular books are beyond his means at the usual bookstores they can frequently be bought at second hand. In addition to this source of enjoyment all who can afford the outlay should take an agricultural journal and a daily or tri-weekly news paper. The weekly literary papers—so called—are in most instances unmitigated trash. In more thickly populated districts subscriptions might be made to a common fund and a library for the use of the members established at some central point. Among neighbors there might and ought to be an interchange of courtesies in the way of lending such books as their little rural libraries may happen to contain. The loan of a book will take no substance from the lender whilst it may furnish knowledge to the borrower. It is an act of kindness which does not come within the scope of that otherwise judicious admonition which Shakspeare puts in the mouth of Polonius when the latter advises Laertes to—

“Neither a borrower nor a lender be,
For a loan often loses itself and friend,
And borrowing dulls the edge of husbandry.”

Borrowed books carefully read, and of course carefully returned, have exactly the contrary effect.—They lighten the cares of husbandry—make many an otherwise idle hour pass pleasantly, and strengthen friendships instead of weakening them. But, after all there is nothing like having a library—however small it may be, in one's own household.

MEADOWS—TOP-DRESSING.—On most farms there are portions of meadow land whose product of hay is very small compared with others in the vicinity. These sections can be much improved, without breaking the sward, by a liberal top-dressing of lime and salt. These will invigorate the growth of the after-math, and if repeated the ensuing spring will render the poor spots equal in productiveness to those by which they are surrounded. The experiment is worth trying, unless it is deemed desirable to break up the whole meadow for the purpose of re-seeding at a future day. Nearly the same result can be produced by the application of leached wood ashes as a top-dressing where the material is attainable for that purpose.

CHEAP LABOR.—In Switzerland labor is worth from ten to twenty cents per day. The women do as much farm labor as the men.

AGRICULTURAL SOCIETIES AND FARMERS' CLUBS.

An esteemed correspondent who has had much experience of the matter of which he treats, admonishes us that it is important to the success of a State Agricultural Society that it should have the hearty support of the great bulk of the farming population, and that no Agricultural Society can either long or usefully exist unless all classes of farmers are largely represented in it. This is so obvious a truth, that no one will question either the importance of securing the adhesion of the farming community generally, to the State Agricultural Society, and their co-operation in its plans and purposes. It is not at all probable, however, that they can all of them be induced to become actual members of the State Society, but they can nevertheless be represented indirectly, and thus exert a most useful influence. They can form clubs and local societies in all parts of the State, and these clubs, by their affiliation with the State Society may be made to add largely to its usefulness. Our correspondent writes:

"If a few farmers will get together once a week and discuss the best way of raising a crop, or of raising stock, and each one tells his experience on the subject, they will be astonished at the number of new ideas which will be elicited during an evening's discussion. As the object is to tell ones' experience and to have a friendly chat upon a given subject, the meetings may be of the most informal kind. A presiding officer, usually elected for the evening, a permanent secretary to keep the minutes—these are all the machinery necessary for some of the most charming meetings.

Perhaps a constitution of a very simple form, to be amended as circumstances might require, (such is the fashion just now) and a few by-laws—the fewer the better—might be of advantage in expediting the business of the meetings. A form is annexed:

Constitution of the — Club.

1. The officers shall be a President and Secretary.
2. The object of the Society shall be the mutual improvement of the members, by the weekly discussion of subjects connected with Agriculture.
3. All persons of good moral standing shall be members who sign this constitution.
4. The officers shall be elected monthly. The question for discussion shall be stated and adopted at a previous meeting, and the president shall assign some person to open the discussion. He may also call upon any member or members for their opinions and experience while the subject is under discussion. At the close a vote shall be taken declaring the sense of the club on the merits of the question.
5. At any meeting, articles, or animals may be brought forward for exhibition, previous notice having been given, so that competition and comparison may be encouraged.
6. An annual fair may be held by the members of the club at such time and place as may be agreed upon, and committees appointed to act as judges, and as managers, and such premiums may be awarded as

will designate the opinion of the club upon the value or excellence of the article or animal exhibited."

We have two objections to urge to the above. The sixth article looks to the independent action of farmers' clubs in respect to an annual fair. This, of course, ignores entirely the State Agricultural Society, and sets up rival organizations, as it were, which would utterly destroy its usefulness. Each club, in our opinion, should be regarded as a branch of the State Society; should be represented at the meetings of the Society, should vote with the Society in respect to the time and place of holding an annual fair, and should, in all respects, cordially co-operate with the State Society in promoting the interests of the farming population generally. The second point we make is, that besides each club being represented by a delegate or delegates, (as a club,) in the meetings of the State Society, every member of these clubs, who can afford it, should become a member of the Society, and by the payment of an annual fee, assist in providing for its support and maintenance in the best and most efficient manner.

To this we add: We will send the *Maryland Farmer* at half price to those clubs which organize, and which send us a brief note of the subjects discussed at their weekly meetings.

DISCUSSIONS AT FARMERS' CLUBS.

A Farmers' Club North has selected the following topics for discussion at its meetings during the present Winter; the list will suggest suitable subjects to other clubs:

"The results of farming in 1866. In what way have farmers received material benefit from newspapers and books devoted to agriculture, or from agricultural societies, during the last ten years? The best breeds and the best methods of managing domesticated animals. Pastures, and the best methods of managing them. Economy of labor—is it practicable to fix the hours of farm labor? Is there any labor appertaining to the farm which can be suitably and profitably performed by women? In what manner can the interests of agriculture be best promoted? How can we raise porkers in the cheapest and best manner? Is it profitable, taking the question of manure into consideration, to raise and fatten swine? Rural embellishments as a means of making our homes attractive—Is it practicable to ornament the grounds about our houses with trees, shrubs and herbaceous plants that are productive, instead of such as are purely ornamental? Adaptation of crops to soils—is the chemical analysis of soils of any use to farmers? Taste in the construction of farm buildings, convenience and economy to be considered. Raising and preserving seeds—the best varieties of potatoes, early and late, and the best mode of raising them."

Our Agricultural Calendar.

Farm Work for February.

Occasionally there are a couple of weeks in February when the weather becomes so mild that the ground is open and ploughing can be done even in the middle States. These instances, however, are becoming more rare of late years; and, owing partly to unexplained atmospheric changes and partly to the rapid disappearance of large tracts of forest land, our winters are becoming more severe and our summers drier and hotter. The open weather of February to which we allude was supposed to be analogous to the brief season of Indian summer in October or November of each year, but which, of late, has become less strongly marked and less distinctive in its peculiar characteristics than it used to be. There are those who endeavor to prove by meteorological tables that our seasons moved in circles of seven years, during which our winters gradually increase in intensity and then gradually relapse again into mildness. However this may be, there can be no doubt whatever that we have had, of late, a succession of winters in which the periods of extremely cold weather has been greatly prolonged, and that our summers have been correspondingly hot. From present appearances, too, we need scarcely look for much open weather in February; and, therefore, the work to be done will be restricted to the usual winter operations—such as the cutting of wood for fuel and fence-rails; the repair of harness; the morticing of posts and pointing of rails; the collection of materials for compost; the care of stock, and all the usual arrangements that thoughtful farmers make preparatory to the opening of the Spring. The following suggestions, therefore, must be taken as indications of what may be done under favorable circumstances rather than as imperatively required to be done:

WINTER PLOUGHING.

If the season should prove an early one, seize the opportunity to break up any stiff clays that it is designed to bring under cultivation. One point, however, must be observed—they must be in a state fit for the plough. If too wet they will clod, and then the land will be injured much more than it will be benefited. No stiff clay should be ploughed while it is wet and adhesive; but if, upon examination, it is found that the soil rapidly pulverizes before the plough, push the work forward at once, and let the harrow follow as speedily as possible.

PREPARING FOR OATS.

Although it is entirely too early during this month to seed down to oats in this latitude, yet a few degrees further South it is possible that the season will

permit it to be done. One thing, however, it is of importance to understand—the sooner oats are seeded after all danger of severe frost has disappeared, the more certain will be the chances of a full crop if the land is in good condition. The soil should be ploughed deeply, and if of a texture inclining to clay—for oats flourish best on a stiff soil—it should be thoroughly harrowed and cross-harrowed. Oats will do well on almost any good soil except a light sand, and a grass sod turned under is an admirable preparation for this crop. It should, nevertheless, be borne in mind that, by those who have a choice of fields to select from, that the soil best adapted, above all others, to the growth of oats is a moist cool deep clay-loam, abounding in vegetable matter—the heaviest crops being always taken from fresh soil, newly-broke up, or from old pastures. If oats are cultivated on stiff grass land, the sward should be completely turned over so as to facilitate by its rapid decomposition the growth of the oat plant. The following analyses of the seed and the straw of the oat indicate very clearly the constituents contained in its ashes:

	SEED. Boussingault.	STRAW. Levi.
Potash.....	12.09.....	12.18.....
Soda.....	00.00.....	14.69.....
Lime.....	3.07.....	7.29.....
Magnesia.....	7.07.....	4.58.....
Phosphoric acid.....	14.09.....	1.94.....
Chlorine.....	6.20.....	00.00.....
Sulphuric acid.....	6.20.....	00.00.....

It will thus be seen that oats take up a very large proportion of the potash and phosphate in the soil; and, contrary to the received opinion, are an unusually exhausting crop. To meet this drain, the farmer must, of course, supply the soil with those ingredients that the oats withdraw from it. This can be done either by the direct application of wood ashes, lime and bone-dust or by compost.

On soils partially impoverished, either of the following mixtures will suffice for an acre:

1.—15 two-horse cart loads of compost formed of one-third barn yard manure and two-thirds swamp muck, woods' earth, &c., intermixed with 5 bushels of unleached wood ashes, or 8 of leached, 1 bushel of plaster and 2 bushels of refuse salt.

2.—8 bushels of bone-dust, 10 bushels of wood ashes, 1 bushel of plaster, 2 bushels of salt. Mix these together, and let the heap stand for a few days before carting out.

3.—2 cwt. of manipulated guano, 5 bushels of ashes—10 would be better; 1 bushel of plaster, and 2 bushels of salt.

4.—10 two-horse cart loads of barn-yard manure, 5 bushels of bones, and 10 bushels of ashes.

SOWING CLOVER SEED.

Both as a covering crop to the land and as one of the best forage plants, a free use of clover on land is indispensable to good farming. Clover seed may be

sown in February on the snow, and the plan is quite a good one if a thaw follows and open weather continues to prevail. On the other hand, if, after a thaw and warm days, a heavy frost succeeds, much of the clover will lose its vitality. But if clover seed cannot be seeded in February, the work should be done in March as early as possible, both on the freshly-seeded oats among the winter grain. It is a good plan to seed orchard grass with clover at the rate of a peck of clover seed to two bushels of orchard grass to the acre. (Our Farmers usually sow too little seed.) The principal objection urged against Orchard grass is that when it is thinly sown it grows coarse and bunchy. But this objection can be readily obviated by heavier seeding.

PLASTERING CLOVER FIELDS.

Such fields as are already set in clover should have one bushel of plaster per acre broadcasted over them as soon as vegetation begins to start.

POULTRY HOUSES.

See that the Poultry houses are thoroughly cleansed, whitewashed and fumigated, and repeat the cleansing and removal of the old nests frequently—except, of course, in the case of setting-hens, which, under no consideration, should be disturbed. Give the fowls, at this season, plenty of bits of refuse meat chopped fine, and they will well repay the trifling expense and trouble by furnishing an increased quantity of eggs.

TOBACCO BEDS.

Let these be properly prepared against the time they are wanted. Burn brush over them, and put them in the best condition possible for the reception of the seed.

STORE HOGS.

Feed these regularly three times a day. Give them abundance of litter to work up into manure, and furnish them with a supply of charcoal, or rotten wood and ashes, to correct acidity, and keep them in a thrifty condition.

ORCHARDS.

Set out a young Orchard of Fruit Trees as soon as the season will permit. Prune the old trees, and scrape carefully the bark. Loosen the earth about their roots, and dig in a good supply of lime and ashes. If the soil of the Orchard is becoming impoverished, top-dress it with a compost.

OUR SOUTHERN, and indeed our Middle States fruit-growers will find their raspberry, currant, and gooseberry plants to succeed best when the ground has an inclination to the North. Mulching is also even more requisite to production of good raspberries in the South than in our Northern States. Keep the roots cool and moist, not wet, and any tolerable soil will grow good fruit of the raspberry, gooseberry, or currant.—*Horticulturist*.

Garden Work for February.

We again urge upon our friends the advantages of hot-beds as a means of bringing forward vegetables early. The construction of them is so simple—the cost so light, and the amount of attendance required so small, that the surprise is the greater that they are not in general use. Simply stated, a hot-bed is nothing more than an oblong frame, say twelve feet long and five or six feet in breadth—any size, however, will answer. This frame is made sloping from the back to the front, and over it glazed sashes are placed—each sash four feet by six, when a twelve foot frame is used. Where glass is not to be had, or the cost of it is regarded too great, a piece of oiled cotton will answer the same purpose—although, from its semi-transparency, it does not draw the heat so well as glass. Still it will do. Now, everybody knows the fact that a manure pile freshly thrown together will ferment. Build up, then, just such a pile carefully of the size of the frame, and a few inches over. Make it four feet high, and see, in constructing the pile, that the green manure used is well separated, and that the layers are put on evenly, so that as the pile shrinks during fermentation, it shall shrink evenly. Now, put on the frames and the lights to draw the heat, covering all well up of a night. As soon as the heat is well up, put inside the frames about six inches of well-sifted dry rich earth to act as a seed bed; next sow the seed; cover the frames with mats or straw every night during cold weather, but remove the covering during the day; and when the plants are up, water them lightly with tepid water, and in mild weather lift up the sash half an inch to admit air.

Sowing Seeds in Hot-Beds.—About the middle of the month, sow Cabbage seeds of the early and late sorts—either broadcast or in drills—over one-fourth of the bed. The remaining three-fourths may be seeded with Tomatoes, Egg-plants, Lettuce and Radishes. The latter, being sown early, may be scattered among the other seeds. But it is better to sow each kind of seed separately.

OPEN AIR CULTURE.

Spinach.—As soon as the frost has disappeared, prepare a bed for early Spinach. The ground should be made very rich, and should also be deeply spaded and thoroughly pulverized. Drain the drills a foot apart and one inch deep—sow the seed, and press the earth lightly over them.

Carrots, Parsnips and Beets.—It is rather too early to sow seeds of these in February, but all the necessary preparation for getting them into the ground should be made as soon as possible after the danger from heavy frost is over. For the first seeding, drill in a few rows of early sort for early use—manure

the ground rich, by using none but the best rotted manure.

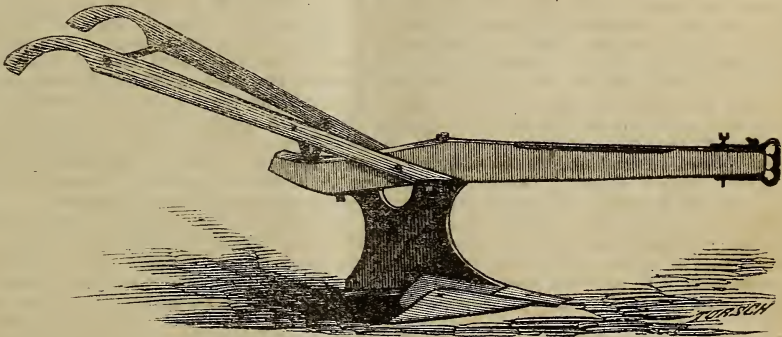
Peas.—The Pea is quite hardy, and will withstand a frost that would kill many other kinds of vegetables. It gives, also, the heaviest crops by early seeding, as it then matures before the warm, dry weather sets in. Plant, therefore, a few rows of early Peas at the first convenient opportunity, and repeat the seeding every two weeks for a continuous supply.

Grape-vines.—*Raspberries.*—Grape-vines should be carefully pruned during this month, as at a later period they would be seriously injured by the profuse flow of sap. Dig around the roots of the vines, and

treat them to a dressing of Phosphatic guano or to a mixture of bone-dust, lime and ashes. Trim the Raspberry bushes; tie them neatly to their stalks, and fork in carefully about their roots a good supply of barn-yard manure.

Pruning Gooseberries and Currants.—These fruits should now be carefully pruned; trimming up each bush whilst the plants are young to a single stem, thus forming a head resembling a miniature tree. The cuttings taken from shoots of the previous summer may also now be set out, provided the season is favorable. Each cutting should be a foot in length, and all the buds except the four topmost ones should be rubbed off before planting.

PREMIUM NEW SUB-SOIL PLOUGH.



The advantages of Sub-Soiling have become so obviously popular among our farmers, that it needs no argument here to convince the agricultural community of its great importance. This plough combines the advantages of a Steel Edge Point and Share, which are also self-sharpening, making it simple, durable, easy draught, and altogether the plough which has long been sought for by the farming community. It has a reversible steel edge, is simple in its construction, easy in draught and management, and adapted to a common team. Following the common plough, it works to admiration, stirring the sub-soil completely, without mixing it with the incumbent strata, and leaving it in the best possible condition to be acted on by the atmosphere, to facilitate the descent of water by filtration, and to afford an unfailing supply of moisture to the roots that pervade the entire mass by evaporation. Simplicity, strength and economy are here most happily combined. Price \$12 and \$15.

Production of a Valuable Manure from the Air.

The highly important agricultural problem of the fixation of the nitrogen of the air in the form of ammonia has been solved by MM. Marguerite and De Sourdeval. Their process is founded on the *cyanization of barium*, and the subsequent decomposition of the cyanide by steam. A mixture of carbonate of baryta, iron filings, refuse of coal tar, and sawdust, is first calcined through an earthen retort; through the porous mass thus obtained, a current of air is passed, the oxygen of which is converted into carbonic oxide, while its nitrogen is transformed in the presence of charcoal and barium into cyanogen, and produces considerable quantities of cyanide of barium. The calcined mixture is introduced into a strong iron cylinder, and a current of steam at a temperature less than 300° is passed through it. All the nitrogen in the cyanide is disengaged under the form of *ammonia*. It is impossi-

ble, observe the authors, to foresee all the results of this discovery. Among other things it suggests the production of nitric acid from the air by oxidizing ammonia.

COCKLE IN WHEAT.—A correspondent in the *Southern Cultivator* says: "It is said that the generating vitality of cockle-seed is destroyed by steeping them in a solution of blue-stone, and I believe it; that the cockle found in wheat whose seed has been thus steeped, is grown from the seed which was in the land before, and not from that sown with the wheat. It would make this short article too long, to give my reasons for this opinion. I desire to call the attention of farmers to this subject, for the purpose of proving the truth or falsity of the statement. All information on the matter of wheat growing is of the greatest importance to us at this time. And all should contribute any facts not generally known."

COMMUNICATED.

FOR THE MARYLAND FARMER.

ARLINGTON CANTELOUPE MELON, AND LATAKIA TOBACCO.

It is customary when introducing a new breed of animals, new and valuable fruit, vegetables, &c., to give a particular statement relative to origin. In the question of the origin of the Arlington Melon I can give but a meagre statement. A few seeds were presented to me by General R. E. Lee's gardener, about the year 1861. He remarked at the time that the melons grew to a very large size, were very delicious, and that he grew them on General Lee's Arlington estate, near Alexandria, Va. Being engaged at that time in mercantile pursuits, I deposited the seed in a safe place until I could give it my personal attention. That time did not arrive until the year 1864. Excepting the season of 1866 I grew merely a family supply. Noticing their enormous size and superior flavor, I prepared half an acre of sandy loam, bearing a southern aspect, formed hills two feet wide and seven feet apart each way, incorporated a shovel-full of well decomposed manure to each hill, and gave the plants ordinary cultivation. Being anxious myself, and to gratify several curious friends, I reluctantly wrote to General Lee on the subject; he replied as follows:

"I regret that I cannot now inform you of the origin of the cantaloupe seed of which you enquire. The trace of that as well as many other things has been swept away. If you can spare any of the seed I will gladly accept your kind offer to send me some."

Last summer I sent samples of those melons to several of my friends, among the number the publisher of the *Gardener's Monthly*, (published in Philadelphia,) and to yourselves. The publisher of the *Gardener's Monthly* gave them a very favorable notice, and remarked that they are known as the "Mexican," and erroneously "Christian Melon." So that we introduce to the community something that is really valuable, 'tis not of much importance where it originated. As regards this country, I think I can safely say that your humble friend is the originator. Had I thrown aside the seed my worthy Scotch friend gave me, the community might never have become possessed of this delicious fruit. As regards excellence of flavor, and size, (as far as my knowledge extends,) they have no compeer. The nearest approach to them, as regards flavor, is the Prescott; a melon weighing about five pounds, oval in shape, straw-colored meat, and the exclusive cantaloupe sold in the Paris market. Some years since I planted a package of the Prescott melon seed, imported from Paris. The result was a melon as tasteless as a pumpkin. Whether it was the fault of the French grower, mine, or our climate, I cannot say.

The form of the Arlington (a name given by myself by way of distinction) melon, is oval, deeply sunken ribs, green meat, very thin rind, remarkably juicy, melting and spicy. My largest melons weighed twelve pounds, were sixteen inches long, and twenty-eight inches in circumference. By high manuring and cultivation, I believe they may be increased in size twenty-five per cent.

LATAKIA TOBACCO.

Bayard Taylor, the celebrated traveler, gives the

following description and mode of cultivating this new variety of smoking tobacco. Last season I obtained a small parcel of seed from Mr. Taylor's stock. The seed grew finely and produced an abundance of plants, which I set out on a well prepared lot. Very few worms appeared on the leaves, the plants grew vigorously, and presented the richest and most beautiful crop of tobacco I ever saw. Relative to smoking qualities I can say nothing until I pass it through the handing, bulking and packing process. Mr. Taylor's description of the character of the plants is substantially correct. He says:

"The tobacco known as 'Latakia' (or Latakia) is not peculiar to the city of that name, on the coast of Syria, but is cultivated throughout the entire Mount Lebanon region. I have seen it from Acre on the south, to the mouth of the Orontes, near Antioch, on the north. Although it is considered, everywhere in the Orient, as the finest smoking tobacco, (bringing a much higher price than the Turkish or Rumelian,) its greatest consumption is in Egypt, where its singularly soft and aromatic quality causes it to be in such demand that nearly the whole product of Mount Lebanon is there consumed. The flavor is so different from the ordinary varieties of tobacco, that I was satisfied, on first making acquaintance with it in Egypt, that it must be a distinct species. I afterwards saw it in all stages of growth, on Mount Lebanon, and my conjecture was immediately confirmed.

The plant is low and stout, rarely exceeding three or four feet in height, with a very thick, rigid, viscid stem; leaves broadly ovate, rounded at the end, of a dark green color and velvety texture; flowers very short and of a pale, yellowish-green color, in dense clusters, with large spherical seed-pods, which (I have noticed) always bend the stalk with their weight, and sometimes droop so as to touch the earth. The plants exhale a peculiar gummy odor while growing.

My seed was obtained in Egypt, whither it had been brought direct from Mount Lebanon. It was first sowed in a hot bed, about the middle of March, and the plants transferred to the garden the first week in May. They grew very luxuriantly, began to blossom by the end of June, and the first seed-pods ripened a month later. I have no doubt that it would be equally well, or perhaps better, not to plant them until the middle or end of April. Their growth was much more rapid and vigorous than that of the American tobacco-plants beside them, the seeds of which had been sowed at the same time. The climate and soil (which was only moderately rich,) seemed to suit them perfectly, and I have no doubt but the Latakia plant may easily be acclimated anywhere in the United States, south of Lat. 42°. My own farm is 39° 50'.

The large lower leaves were pulled at the time the seed-pods were perfectly formed, dried in the shade and then pressed in small packages, as is done in the East. These leaves are still rather too green for use, but they have the same delicious odor (somewhat resembling that of dried roses,) which is peculiar to the tobacco of Mount Lebanon. It is used almost exclusively for smoking in pipes, but I have also seen in Malta cigars manufactured from it. The genuine Latakia is almost unknown in this country. That which is sold under the name is Turkish, or Rumelian tobacco, grown in European Turkey. Small packages of Latakia are sometimes brought to New York, and there retailed at high figures."

To prevent correspondence I have appointed Sinclair & Co., 62 Light street, Baltimore, my agents for the sale of my melon and Latokia tobacco seed. I also state their prices—25 cents per packet.

R. SINCLAIR, *Clairmont, near Baltimore.*

FOR THE MARYLAND FARMER.

FARMERS' GARDENS—No. 10.

RHUBARB.—Varieties: *Victoria*—A large kind; one of the best for general use. *Lineæes*—Large, tender, and fine flavored. *Downing's Mammoth*—Extra large, tender and fine. *Prince Albert*—An early variety; superior quality. *Champagne*—New large scarlet; very tender. *Cahoon's Mammoth*—Very large. *Culture.*—Rhubarb succeeds best in deep, somewhat retentive soil. The richer its condition, and the deeper it is stirred, the better. Sow in drills, fifteen inches apart, an inch deep; thin out to six inches apart. In the fall or spring trench a piece of ground and manure it well; then transplant the young plants into it three feet apart each way. Cover lightly with manure every fall and dig it in in the spring. To procure an immediate supply, plant roots already grown. When grown from the seed it will not do to cut before the third year. Rhubarb can be forwarded very much in Spring by placing a headless barrel over a hill and surrounding it with warm manure two feet high. In gathering for use, take the stem in the hand and with a sideways sudden jerk pull it from the hill; always leave several stalks in each hill to maintain the vigor of the root. Seed stalks should be cut out as soon as they appear.

SALSIFY, or OYSTER PLANT.—The Salsify is a hardy perennial plant, and is principally cultivated for its roots, which are long and tapering, and when grown in good soil, measure twelve or fourteen inches in length. It is considered wholesome and nutritious. When cooked, the flavor resembles that of the oyster, and is a good substitute for it; whence its popular name. *Culture.*—This plant succeeds best in a light well-enriched soil, which, previous to sowing, should be stirred twelve or fourteen inches deep. Sow the seed in drills one foot apart and half an inch in the drill, early in Spring. When an inch high thin them to four or six inches apart. Keep the ground clear of weeds giving them the general culture of parsnips or carrots. They are perfectly hardy, and may remain out all winter. For winter use pack in sand or earth in the cellar. Those left in the ground should be dry before commencing to grow in the Spring.

SPINACH.—Varieties—*Round or Summer*—Leaves large, thick, and fleshy; rounded at the ends; a little crimped; in general use for early planting. *Fall, or Prickly*—Leaves seven or eight inches long; thin in texture and nearly erect; halbert-shaped; one of the hardest, and most generally used for fall planting. *New Zealand*—A large growing variety, requiring a warm rich soil. Its superiority over other varieties consists in the fact that it grows luxuriantly, and produces leaves of the greatest succulency in the hottest weather. Spinach is very hardy, and a very important vegetable for cold climates. It is extremely wholesome and palatable. *Culture.*—It is best developed in a rich deeply trenched well manured soil. Sow early in March for Summer crop, in drills fifteen inches apart, half an inch deep, and thin to six inches. When the outer leaves are two or three inches broad, gather for use, leaving the inner ones to continue their growth. For a succession, a

few seeds of the summer varieties may be sown, at intervals of a fortnight, from April to August. Sow from the middle of August to the beginning of September, for the winter crop in a light sandy soil, on raised beds, which enables it better to stand the severe frost.

SQUASH.—The several varieties of squash are very useful in this and other warm climates, as they can be grown to perfection in the summer. It is in general use from June to August, and the late varieties the whole winter until May. Varieties—*Early Yellow Bush Scolloped*.—An early variety, flat, scolloped-shaped; yellow; flesh pale yellow, tolerably fine grained and good flavored; very productive. *Early Egg*.—Skin yellowish white; thin; flesh dry and well flavored in its green state; small. *Early Summer Bush Crookneck*.—Generally esteemed one of the finest of the summer varieties; color bright yellow; skin warty, thin and easily broken; flesh dry and well flavored; best when young. *Boston Marrow*.—Form ovate; thin skin; bright orange when ripe; flesh rich salmon yellow, dry, fine grained, and of unsurpassed sweetness and excellence; a fall and winter variety. *Hubbard*.—This is the best winter squash known; flesh bright orange yellow, fine grained, very dry, sweet, and rich flavored; keeps throughout the winter. *Fall or Winter Crookneck*.—Cultivated the most generally in New England for fall and winter use; flesh salmon red, very close grained, dry sweet, and fine flavored; good keeper. *Mammoth*.—This is the largest known variety, and, under favorable conditions of climate, and in rich soil, often grows to the weight of a hundred and forty or fifty pounds. *Turban*.—A superior late-growing variety. At the blossom end, the fruit suddenly contracts to an irregular, cone-like point; of a greenish color, striped with white, and in form and color somewhat resembling a turban; whence its name; flesh orange yellow, thick, fine grained, sugary, and well flavored. *Yokohama*.—A new variety from Japan; finest grained of all the squash, with a rich marrow flavor. *Culture.*—The squash only thrives well in a warm temperature and in a rich soil, as all the varieties are tender annuals. The seed should not be planted in Spring until all danger from frost is past, and the ground warm and thoroughly settled. Make the hills eight to ten inches deep, manure well with fine manure, and cover about three fourths of an inch deep. Keep the soil about the plants loose and clean, removing the surplus vines, allowing no more than three plants to a hill. The smaller or bush varieties are planted four feet apart and the others six to eight feet each way. Use summer varieties before the skin becomes hard. The winter varieties should all be gathered before frost; be stored in a dry room and kept at an even temperature rather warm than otherwise; it is essential to good keeping that a dry atmosphere and mild temperature be maintained uninterruptedly.

JIARDINIÈRE.

COAL OIL, &c.—A Harford county correspondent writes us:

"Do not stop the 'Farmer' now or at any other time! * * By the profuse use of coal oil for Lice, a neighbour of mine produced *abortion* and lost every vestige of hair from a fine brood-mare. Had you not better caution your subscribers in regard to its excessive use? What will take Lice off a Newfoundland dog? [Coal oil, used with judgment, has 'knocked them higher than a kite.'"

FOR THE MARYLAND FARMER.

GULLIES—HOW TO FILL AND PREVENT.

Having succeeded in numerous instances in closing up gullies of long standing, and producing and maintaining a surface pleasant to cart and mow over, and making it produce a remunerative grass crop, I have decided to give you for publication the process by which I accomplished it: Plow them in from both sides until a grade is produced that will admit of the team and plow passing over them at right angles with them; then commence and continue plowing and harrowing in that direction until the surface soil from between the gullies is mingled to a considerable degree with the sub-soil turned in from the banks in the first process; then back-furrow in both sides again, plowing several furrows wider on each side than in the first plowing. Then plow and harrow again in the opposite direction, using the sub-soil plow after the surface hill-side plow, until the entire soil of the hill-slope, inclined to gully, shall be plowed to the depth of fully thirteen inches. Now harrow thoroughly, remove all stones and other obstructions to the scythe, then with the hill-side plow, plow water furrows from one to three rods apart, around the hill, nearly parallel, and in such direction that the furrows shall have a very gentle fall; and continue them until they shall discharge on a surface that is nearly level. Clean out the water furrows with a hoe to the depth of about six inches, depositing most of the soil, removed with the hoe, on the lower side of the furrow, and leave both banks with a uniform gentle slope. This done, seed with orchard grass seed, at the rate of fully three bushels per acre, harrow the seed in with a light harrow, running in the same direction which the water furrows run. The harrowing in of the seed is to be done in conjunction with the application of a heavy top dressing of long, unrotted manure. Proceed thus: Begin at the base of the hill and harrow around the hill, a belt of a width that will be convenient to cover with manure, spread from the carts or wagons, driving on the upper side of the harrowed belt, and thus continue until the work is completed.

If the work is performed as I have directed, the harrow will close the tracks of the vehicles, and by passing the harrow lengthwise of the water furrows they will not be filled or injured. Short crooks should be avoided in the water furrows, but in crossing the larger gullies, which may not be brought to a uniform grade, there may be a gentle curve in the water furrows, so as to maintain the fall in them as uniform as possible. It will sometimes be necessary to haul a few loads of earth to form a dam or embankment below the water furrows in the centers of the old gullies, to avoid too much curve in the furrows just at these points.

I improved one of the worst gullied hill-sides in Baltimore county in this manner, some ten years since, and it has been mowed every year since, producing fair crops. I would state that it has been top dressed once since, and there is not a gully in it. The land was utterly worthless when I commenced upon it, and it now yields one and a half tons per acre of good hay, at one cutting, and some portion of it is mown twice a year.

I would state that it is very desirable to have a good hill-side plow, and a right and left hand sub-soil plow to follow it, which I have, and could not do without them in my landscaping operations.

It is of the greatest importance to pulverize the

soil of a hill-slope, which is inclined to gully, very deep. The beneficial effects are these: The soil will absorb water in proportion to the depth to which it is pulverized, which not only prevents the fertility of the surface from washing away, but retains water in the soil much longer after it is saturated, and thus greatly increases its production.

When the common surface plow is used for tilling hill-sides, the unavoidable open furrows are very apt to produce gullies, which can be avoided to a great extent by the use of the hill-side plow.

Respectfully yours,

J. WILKINSON, *Baltimore, Md.*

FOR THE MARYLAND FARMER.

HILL-SIDE PLOWS.

I have been using the revolving beam side-hill plow for all purposes, and in every character of surface, for the past sixteen years. I use no other; and find them preferable to any other plow for many reasons.

This plow does not turn over like the old Randolph plow, but is a double plow; or both a right hand and a left hand plow in one. It has double the durability of the single plow. It enables the farmer to till in any direction he desires, and to always turn the furrow down hill, and each of the team alternately in the furrow, which is much easier for them than to continue one constantly in the furrow. By casting the furrow with the slope the draft of the plow is much less than where it is cast against the slope, and it covers vegetation and manure much better. There is often fifty per cent. difference in favor of the furrow turned down the slope in tillage of a hoed crop, as the growth of grass and weeds is not prevented when the sward is only partially inverted, which is unavoidable when there is an attempt to turn the furrow against the slope. The custom with the best farmers, who use the plain right or left-hand plow, is to lay out the field in lands and plow a portion of it by turning the furrows together, and the balance apart, producing the open furrow. This method is decidedly preferable to plowing around the field, but it does not compare in economy with the use of the right and left-hand plow, which I have described, by which we can commence on one side, and turn the furrows all in one direction, and that *with the slope*. There is no loss of time in going around the ends, which, by calculation, is found in tilling in lands of say twenty yards in width, and back furrows of the same width, that a team and plowman travel, in plowing a square of twelve acres, eleven miles more than they would in the use of the right and left-hand plow. This amount of travel is certainly worth saving, to say nothing of other advantages in the use of this plow, which I have enumerated.

I have a right and left-hand sub-soil plow which I use with it, and I can perform thorough tillage with these two, plow with greater ease both to the team and the plowman, and at less cost than with any other plow that I have seen used.

Yours truly,

J. WILKINSON, *Baltimore, Md.*

CUT FLOWERS in bouquets will last many days longer if they are kept at night in a cool low temperature, says one or two degrees above freezing.—Change the water daily, and each time see that it is almost lukewarm.—*Horticulturist.*

MARYLAND FARMER---HEDGE FENCES.

A correspondent at Mebanville, N. C., writes us as follows, under date of January 7th :

* * I live in a part of North Carolina where farming has been conducted ever since the settlement of the country, on the cut-down-and-wear-out, up-and-down-hill-plowing-system. We need the "Maryland Farmer" to teach us how to farm—how to save manure—how to plow—how to take care of stock—in a word how to do every thing connected with farming. I am trying to farm (on a small scale) with some view to improving my land. I have made but little progress yet, but have "large hopes." I am indebted to the *Farmer* for many valuable hints. In the small item of turnips by following the directions of the *Farmer* my investment of \$1.50 paid me more than *ten thousand per cent.*; and if I had had more confidence in the success of my experiment and sowed more largely my turnip crop would have numbered by the thousand bushels almost as easily as by the hundred. I sowed two thirds of an acre which yielded nearly 500 bushels of superior turnips. I hope another year to profit by my experiment and reach better results.

I wish you would give us a practical article on hedges. We must resort to something less expensive and less expansive to our timbered land than the common rail fence. What hedges is of quickest growth, what best, what cheapest? Is the cedar fence so common in some parts of Virginia (made by setting the trees a few inches apart, trimming 4 or 5 high and weaving in the trimmings between the trees) the cheapest fence where we have the cedar indigenous? What is the plan for propagating from the seed?

In reply to the inquiries of our correspondent relative to "*Hedge Fences*," we would say, that it is now generally conceded that there has been no plant tested in this country for hedge fences, which has given such satisfaction as the Osage Orange. It is a rapid growing, hardy plant, and seems to bear cutting back, or trimming admirably. It is found in the greatest perfection in Texas, and it has not endured the winters well, much North of the Latitude of Philadelphia. Mr. Wilkinson of this city, who is a Landscape Gardener, informs us that he prefers them to any other plants both for farm fences and ornamental hedges, or screens.

It thrives best in moist fertile loam, though it will grow in almost every variety of soil, if it only has sufficient fertility, and is well prepared before the hedge is set. The border should be prepared by deep thorough tillage and liberal manuring with stable manure, if the soil is not already rich. It should be subsoiled, or trenched to the depth of fully 12 inches, and eight feet in width. Plants of one year old are considered preferable to planting seed in the hedge border, or to planting older plants. When they are but one year old they have but few lateral roots, and if the border is well prepared and mellow, they may be well set by the use of a dibble, such as is used for setting cabbage plants, only it should be long enough to pierce a hole full 12 inches in depth

and about 2 in diameter at the surface of the ground. Should the tap root be too long for a hole of that depth, it may be cut off and the top, or head of the plant, shortened in the same proportion. The soil should be closely pressed around the plants and be firmly trodden, and if mulched with leaves or strawy manure, few if any of them will die. They will bear as much manure as Indian corn, and like it, their early maturity, so as to form an efficient fence, will depend upon the fertility and depth of the border.—They will grow well in soil too wet for corn.

It requires about six years under favourable circumstances, to produce a hedge that will trim and resist the attacks of any and all of the domestic animals.

The plants should be set in a single row, about 10 inches apart. The plant should not be headed back when it is transplanted, except, when it is necessary to shorten the root. They need no pruning until the Spring following their being set, when they should be cut off to within 2 inches of the ground. As the season for pruning hedges has not arrived, we will defer treating of this branch of the subject until the proper time, when we will give our readers the method and the season most approved.

FOR THE MARYLAND FARMER.

SWEET POTATO CULTURE.

I am tempted to give your readers, through the *Maryland Farmer*, my mode of cultivating the Sweet Potato, down here in Caroline county, Md. I do not advance it as anything new or novel, but simply as a plan which has always produced me an abundant return for my labor and trouble:

I first select a patch of ground situated neither on an elevation nor on a flat, but a medium position, soil of moderate stiffness. I then give it a heavy dressing of stable manure, but moderately rotted: after the lapse of about one month I turn the manure under. The manure to be applied in August. Then pulverize with the cultivator or drag harrow, occasionally giving it a plowing. Continue this process until you extract all the roots of the weeds that may be in the ground. About the first of December give the ground a light coat of unleached ashes; let it then lay until March, then again plow. My reason for this manuring and labor before hand, is to entirely mix and dissolve in the earth all the nutritive qualities of the manure; as the sweet potato cannot feed on coarse and unrotted manure; for all its feeders are simply a net, or bunch of small fibers, feeding only on substances well prepared. As to time and mode of planting, season and locality must determine.

Caroline County, Md.

CHOPTANK.

NEARLY all lands dressed at this season of the year with a sowing of common salt, say eight bushels, and of plaster paris, say one bushel to the acre, will be much benefitted. Dwarf pear orchards and old vineyards will especially receive benefit from such application.—*Horticulturist*.

GUANO.

From an Essay on "Manures and their Application," by Simon Brown and Joseph Reynolds, M. D., of Concord, Mass., in the Agricultural Report of 1865, we extract the following :

Guano has been more extensively used as a special fertilizer than any other, perhaps than all others.—It consists of the excrement and exuvia of birds dropped upon the same spot through long periods of time. The birds select some island of the ocean where their favorite food abounds, congregates upon it in vast numbers, and there rear their young. This is also their resting place by day and night. The consequence is that all their droppings, when they are not upon the wing, fall upon the same place. Long before the keel of any vessel divided the waters of the vast Pacific, or the foot of man trod upon its islands, these birds were collecting their food from its prolific bosom, perpetuating their kind, and adding layer upon layer of their excrement, until some of them are now vast accumulations of guano, twenty, forty, or sixty feet in depth. It is calculated that the deposits of it in south and middle Peru amount to more than twenty millions of tons. The best guano is found in those tropical latitudes where it seldom or never rains. This vast mass, however, is not entirely composed of the digested droppings of the birds. It contains also feathers, bones, and the animal matter which comes from the decay of the birds themselves. The great difference in the results obtained from the analysis of different samples of guano indicates that age, exposure, and other circumstances greatly affect its properties. Sound guano contains a large amount of ammoniacal salts as well as phosphates. In birds, the secretions of the kidneys, as well as the intestines, are carried into the cloaca, where they become mixed and combined. The food of the sea-fowl, which produces this substance, is almost wholly fish, on which account their excrement is much richer in nitrogen than that of birds or animals that feed on vegetable food. Its value depends essentially on this fact.

Composition of Guano.

Professor Norton gives the composition of a few leading varieties in the following table :

Variety.	Water.	Organic matter and ammoniacal salts.	Phosphates.
Bolivian....	5 to 7	56 to 64	25 to 29
Peruvian....	7 to 10	56 to 66	16 to 23
Chilian	19 to 13	50 to 56	22 to 30
Ichaboe....	18 to 23	33 to 44	21 to 29

This, it is evident at a glance, is an extremely rich manure; the quantities of ammoniacal salts and of phosphates are remarkably large. The Ichaboe guano contains much more water than the others, because the climate in that region is not so dry as on the west coast of South America. It is also more decomposed, giving usually a stronger smell of ammonia. The Pacific guanos have very little smell of ammonia, but if they are mixed with a little quicklime and gently heated, the odor becomes extremely pungent.

More recent importations are from two islands in the Pacific discovered by Americans, and called Baker and Jarvis islands. Says Leibig, "The guanos from these islands are distinguished from others by their acid reaction and greater solubility. They contain only a small quantity of substances containing

nitrogen, no uric acid, and small proportions of nitric acid, potash, magnesia, and ammonia. The Baker's island guano contains as much as eighty per cent., the Jarvis thirty-three or four per cent., of phosphate of lime. The latter has forty-four per cent. of gypsum. These guanos approach nearest in their composition to bone dust. Their condition enables the farmer who wishes to accelerate their action, to convert them into superphosphate, by the addition of from twenty to twenty-five per cent. of their weight of concentrated sulphuric acid.

According to an analysis by Voelker, one pound of guano was found to be equal to fifty pounds of farm-yard manure, and that it contains these elements in the most concentrated form, and permits the application of them to the field more conveniently than farm-yard manure, as it may often be done after putting in the seed.

The difference between the Peruvian and Mexican guanos is, that the former contains a larger proportion of the ammoniacal salts and the latter a larger proportion of the phosphates. The especial value of the former may be seen in the increase of the straw and culms in grain and grass; while the value of the latter is manifested in the increased volume and plumpness of the grain and seeds. The high prices at which the guanos have been held for the past few years have greatly diminished their use in this country. At a reasonable price they might be used to great profit on our partially exhausted soils, especially when used in combination with carbonaceous matters. If good guano can be furnished at the seaports at from forty to fifty dollars per ton, it would find an extensive demand. It is capable of increasing, under judicious application, the crops of grain, potatoes, and grass at least thirty-three per cent. Owing to its comparative cleanliness and facility of application, it is peculiarly suited to horticultural and floral improvement.

But guano is shamefully adulterated, and the farmer not only frequently loses the money he pays for it, but loses his labor, the use of his land, and the crop which ought to grow upon it. Professor Johnston mentions an instance of four vessels which sailed from English ports, ballasted with plaster of Paris intended for admixture with the guano when the vessels were loaded at the islands. Another favorite material for adulteration is umber, so that in some cases the farmer gets fifteen hundred pounds of umber to the ton, and only five hundred pounds of guano. In order to protect the purchaser from such outrageous impositions, the professor gives the following as tests :

1st. The drier the better; there is less water to pay for and transport.

2d. The lighter the color the better; it is not so completely decomposed.

3d. If it has not a strong ammoniacal smell, it ought to give off such a smell when a spoonful of it is mixed with a spoonfull of quicklime in a glass.

4th. When put into a tumbler with water and well stirred, and the water and fine matter poured off, it ought to leave little sand or stones.

What is the effect of guano upon crops?

In the first place, is it permanent? The popular notion is that it is not; but we think it must extend to two crops, because if its ammoniacal salts are nearly exhausted the first year the phosphates will continue to act beyond one year. Professor Johnston says guano very much resembles bones in its composition, and as bones are known to benefit crops in an entire rotation, guano ought to do the

same. The chief difference between bones and guano is this; that the guano contains ammonia ready formed, or forming, so to speak, while the bones contain gelatine, which forms ammonia only during putrefaction. The ammoniacal part of the one, therefore, will act early; of the other, after a longer period, while the permanent effects of the remaining ingredients of both will be very much alike. The guanos, then, having the most ammonia will have the greatest present effect, while those having a larger amount of the phosphates will be the most permanent. Nearly all the authorities we have consulted agree in the conclusion that three or four hundred pounds of pure guano is worth as much as fourteen to eighteen loads of ordinary manure. An instance of its energy is stated by Professor Norton, where eight hundred pounds being put upon an acre of turnips, they all grew to tops and produced no bulbs. Even the succeeding crop of wheat was so rank in its growth that the grain was miserable.—Hon. Marshall P. Wilder, well known to the country as one of the leading pomologists, applied eight hundred pounds per acre, and harvested from it sixteen hundred bushels of carrots. The following statements were communicated to us several years since by David Mosely, esq., of Westfield, Massachusetts. Mr. Mosely is a thrifty, observing farmer, who manages his estate with singular ability and success. He says (New England Farmer, vol 8, p. 238) that three hundred pounds of guano, in one instance, increased the crop of corn fifteen bushels per acre; that in another \$53 worth of guano gave a profit of \$77; that in a third instance he manured a field of seven acres with fifteen cart-loads of good stable manure, and on five acres of it sowed one hundred and fifty pounds of guano per acre. The portion on which the guano was put yielded twenty-three bushels per acre more than the remainder of the field. In a fourth instance he sowed two hundred and fifty pounds per acre, which increased the crop twenty bushels an acre, and it was ten or twelve days earlier for the guano. He further states that three hundred pounds have given him more bushels of potatoes than twenty loads of manure.

How and When to Apply Guano.

1st. As we have already stated, guano is best applied in damp or showery weather.

2d. It should be put on grass lands in the latter part of March or the early part of April.

3d. When applied to land just ploughed, it should be immediately mixed with the soil by harrowing, or, as Mr. Mosely states, by brushing it with birches or other bushes.

4th. When grain is sowed early in the autumn, only a portion of the guano intended to be applied should be then used, but the balance should be put on in the spring. If the whole is applied in the fall the grain sometimes becomes too luxuriant and is liable to be injured by the frosts.

5th. Guano should be applied with reference to the present crop only, and not with the purpose of benefiting succeeding crops.

6th. Guano, before application, should be mixed with five or six times its weight of charcoal, fine soil, or dried muck. We once caused four tons of Peruvian guano to be spread upon a floor and mixed with six times its weight of fine black muck in layers of the two articles. After it had remained in this condition two weeks, it was overhauled and the pile evened up and covered with clean muck. The same operation was repeated in two weeks more.—

At planting time, two or three weeks after the second overhauling, it was shovelled into carts, taken into the field, and a moderate handful thrown into each hill. The corn not appearing in due time, examination was made into its condition, when it was found that most of the kernels had sprouted, but as soon as the tender germ had reached the guano it perished. Of the sixteen acres to which it was applied not a tenth part of the corn came up. Our next conclusion, therefore, is—

7th. That guano should on no account be allowed to come in contact with the seed.

POUDRETTES.

The poudrettes consist of blood, fish and animal matters, and night-soil, dried and combined with substances capable of deodorizing them and absorbing their ammonia, phosphuretted hydrogen, and other gases and moisture, and reduced to powder. A species of poudrette, called fish manure, is now prepared by steaming and pressing the fish, chiefly menhaden, for the purpose primarily of obtaining their oil. These fish are taken in nets in large quantities at certain seasons. They are steamed and subjected to strong pressure, by which the oil is forced out, and the residuum is left almost as dry as so much seasoned wood. It is then ground and packed in barrels for the market. All the poudrettes are packed in barrels or bags, and can be readily transported by land or water. In some instances the entire fish, fresh from the ocean, are used for carrying a crop of corn, by depositing one or two in a hill, drawing a little soil over them, and dropping the corn upon it. Fish are extensively and profitably used by the farmers on Long Island and in many places on the coast of New England. On Chesapeake bay, in Maryland, the farmers collect large quantities of fish offal and cart them many miles inland, and also from the fisheries on the Potomac, Delaware, and other rivers.

When properly manufactured the poudrettes are very valuable manures. When applied to the roots of plants, in a soil well supplied with coarser manures, they give a vigorous start to young plants, and a larger development and a deeper tint to the petals of flowers. When applied in the hill they give to the young corn a fine and early growth.—They are rapidly decomposed in the soil, and should always be so deeply covered that their evolving gases may be retained by it. They should be sprinkled over a surface of ten or twelve inches square, rather than thrown in a mass around the seeds or roots of young plants. If the soil is cold, or the season backward, their good effects are immediately manifest. The poudrettes have been suggested as a means of improving the culture of the cotton plant, and as they are easy of transportation and application, it is desirable that they should be fairly tried, and the present seems to be a favorable time for trying them. On light soils, or on soils partially exhausted, they must prove a powerful stimulant to the growing plants. They would seem to be well suited to the sandy soils of the sea islands on the coast of South Carolina and Georgia. Three or four hundred pounds to the acre will probably be sufficient to insure a large crop. In the warm climates in which cotton is grown, cattle are not fed in the barn; stable composts are, therefore, not to be had. Composts made of beans, weeds, and other vegetables, with lime, ashes and salt, and guano and poudrettes, seem to be the only manures within the reach of the planters. At the present time, when

labor is so difficult to be obtained, and cotton is in such demand, we would earnestly urge that experiments should be made with some or all of these substances. Oil cake, made by expressing the oil from the cotton seed, may be found an excellent fertilizer for the plant. If by these means a larger crop can be made on the acre, labor will be saved, and the profit from its culture will be increased. With the introduction of improved farm implements, improved methods of culture should also be introduced, that the losses of past years may be the more speedily recovered.

We would suggest the following method of applying poudrette or guano in cotton culture as one that is both cheap and easy: Plough furrows at such distances from each other as it is desired that the cotton should grow; sprinkle the fertilizer in these furrows; then cover it by turning a light furrow on to it from each side, which will form a ridge; now pass a light roller, long enough to take two at a time, lengthwise of the ridges; plant the seed upon the ridges with a seed sower or by hand, and cultivate in the usual way. By this method the tender germs of the seed will not be brought into immediate contact with the fertilizer; and in the case of guano and ashes this is a matter of much importance. By the time the radicles reach the manure thus buried, they will have become sufficiently firm to resist any caustic action they might exert, and be able to appropriate the stimulating nutriment they afford, and will thus make a vigorous and luxuriant growth.

THE CULTIVATION OF HOPS.

Hops will grow on any soil that produces good crops of wheat and corn; but hops require heavy manuring, with barnyard dung. First spread it plentifully and plow it in, and then a top-dressing will answer every third year, covered and worked in by a cultivator. Put a forkful on each hill in the fall, as a winter protection.

Set the vines from six to seven feet apart, in rows both ways, so as to cultivate each way; and when this is done early in the season, and *well done*, it is not much labor to keep the vines free of weeds.

Poles should be used for the hops to run on, as the short stake and cord system is not a good one, as the vines do not produce as large crops on this system as when they run up poles. But the poles are expensive, from \$15 to \$20 a hundred, 15 feet long, at least, and from 800 to 900 are required for an acre. The hop growers of Central New York use cedar poles wholly. In the fall they are raised when the hops are picked, stacked up in a neat workman-like manner, some 30 or 40 in a stack, with the extreme upper ends so interlocked that no winds can blow them down. There is a *science* in stacking hop poles that no man can master at first sight.

It takes three years to get a hop plantation in full bearing; but there is more money made in that, than in any other farm crop. Farmers are getting to be wealthy very fast, who grow hops, the *net* profits being \$200 to \$300 per acre in most cases.—*Rural American*.

ADVANTAGES OF PULVERIZING THE SOIL.

The effects of pulverizing or stirring the soil are numerous:

1. It gives free scope to the roots of vegetables, and they become more fibrous in a loose than a hard soil, by which the mouths of the pores become more numerous, and such food as is in the soil has a better chance of being sought after and taken up by them.

2. It admits the atmospheric air to the spongioles of the roots, without which no plant can make a healthy growth.

3. It increases the capillary attraction or sponge-like property of soils, by which their humidity is rendered more uniform, and in a hot season it increases the deposit of dew and admits it to the roots.

4. It increases the temperature of the soil in the Spring by admitting the warm air and tepid rain.

5. It increases the supply of organic food. The atmosphere contains carbonic acid, ammonia, and nitric acid, all most powerful fertilizers and solvents. A loose soil contracts and condenses them. Rain and dew also contain them. And when these fertilizing gases are carried into the soil by rain water, they are absorbed and retained by the soil for the use of plants. On the other hand, if the soil be hard, the water runs off the surface, and instead of leaving these gases in the soil, carries off some of the best portions of the soil with it.

6. By means of pulverization, a portion of atmospheric air is buried in the soil, and it is supposed that ammonia and nitric acid are formed by the mutual decomposition of this air and the moisture of the soil, heat also being evolved by the changes.

7. Pulverization of the surface of soils serves to retain the moisture of the sub soil, and to prevent it from being penetrated by heat from a warmer, as well as from radiating its heat to a colder atmosphere than itself. These effects are produced by the porosity of the pulverized stratum, which acts as a mulch, especially on heavy soils.

8. Pulverization also, as the combined effect of several of the preceding causes, accelerates the decomposition of the organic matter in the soil and the disintegration of the mineral matter, and thus prepares the inert matter of the soil for assimilation by the plants.—*Journal of Applied Chemistry*.

Mrs. Partington says she can't understand these market reports. She can understand how cheese can be lively, and pork be active, and feathers drooping—that is, if it's raining; but, for her life, she has no notion how whiskey can be steady, or hops quiet, or spirits dull; nor how lard can be firm in warm weather, nor iron unsettled, nor potatoes depressed, nor flour rising—unless there had been yeast in it, and sometimes it would'n't rise then.

MANURE TO KILL WEEDS.

Is there any manure which will kill weeds? is a question which no doubt often occurs to many of the readers of the *Telegraph*, especially when they are trying to eradicate them by manual labor. Will nitrate of soda, nitrate or muriate of ammonia, guano or urates kill them?

That such questions should be asked proves one thing at least—that there is a general desire to know how to extirpate them. Weeds, like other plants, have each their peculiar constitution, prefer certain kinds of food and perish on the application of others. We have seen a pound of nitrate of soda administered to a single seakale plant without any visible effect. Half an ounce would probably entirely destroy a rhododendron. Common stable manure is very prejudicial to coniferous plants, and in over doses will kill them, while the oak feeds greedily on it. So it is with weeds. Excessive doses of salt will destroy all ordinary vegetation, weeds included, but promote increased growth in asparagus, thus proving itself to be a poison in one case and nutritious food in another. But salt cannot be used to extirpate weeds generally, for some of them will flourish on it.

Professor Henslow succeeded in destroying moss and leaves in a gravel walk by means of corrosive sublimate, green vitriol and blue vitriol, especially the latter. But corrosive sublimate destroys every form of vegetation, and neither of the two kinds of vitriol have any permanent action, encouraging the subsequent growth of many kinds of plants, and in this way producing the vegetation of weeds instead of destroying them.

In practice these chemical agents can only be employed on the destruction of weeds in certain special cases, such as Prof. Henslow's gravel walk, asparagus, which thrives under doses of salt which would kill other plants, or of leakale, which seems to be affected in the same way, or of tobacco, which feeds greedily on such quantities of nitrate of soda as would entirely destroy any ordinary vegetable.

In general we must look to other modes of ridding ourselves from troublesome weeds, and we shall find these means in *industry and common sense*—the two separately are good, but they are much better mixed together.

The plain obvious rule is to pull them up as soon as they appear and while still in the state of seedlings, then every plant which is removed is effectually destroyed and leaves no young ones behind it.—Anybody can be taught to distinguish them, and if the plan be persevered in it is plain that there will soon be nothing for the boy to do. Strict attention must be paid to their thorough extirpation when young. It will not do to pull up "almost all" and to leave the remainder to go to seed, for in that case the labor has all to be gone over again.

Few seem to realize the speed with which weeds multiply themselves through their seed which from one single plant will sometimes number several thousands, and which will in many classes of plants produce seed the same year they are dropped, and in some few kinds we have three generations of seed in one favorable season.

The daisy will produce from two to three generations, ragweed as many, and "lamb's quarter" two. Whenever a manure is discovered which will kill weeds and promote the growth of vegetation I hope I may be there to see.—*Corres. Germantown Telegraph.*

CHANGE OF SEEDS.

From the "Report of an Agricultural Tour in Europe," by John H. Klippart, Esq., recently submitted to the Ohio State Board of Agriculture, and published in the late annual report of that body, we extract the following:

I made many inquiries and collected quite a number of items, facts, or at least *supposed* facts, in relation to the change of farm crop seeds, but as it would require entirely too much space to give the details of a tenth part of them, I must content myself by giving a simple statement of the conclusions I arrived at, based, of course, upon the statements detailed to me. It appears that any farm crop, as wheat, for example, may be much improved by culture on a farm with appropriate soil; but there is a limit to the improvement of this variety, which I will designate as variety A, on this farm, which I will designate as farm No 1. After the limit of improvement has been attained on No. 1 it will then, for a series of years, remain stationary, and after that, even with the best culture, will deteriorate. But if, when it has attained its limit on No. 1, and is then transferred to a farm No 2, with equally good or better soil, it appears to be susceptible of still further improvement until it reaches the limit of No. 2, then it will improve again on farm No. 3, &c. Whilst the variety A is deteriorating on farm No. 1, the variety B, under proper treatment from farm No 2 or 3, will improve by the side of it. Hence, the German farmers have adopted a system of seed exchanges and are anxious to obtain seeds from foreign countries. They seem to have given this subject a great deal of attention, and take into account the kind of soil, meteorology, and level above the sea where the seeds were grown, and I am inclined to think they make it a point to obtain good seeds from elevated regions grown on an inferior soil. The exchanges are conducted mostly by the local agricultural societies.—The Sonderhausen agricultural association have made many experiments in the exchange of seeds, and now recommend, as the result of their experience, that "seeds from a good rich soil, to a cold and indifferent one is profitable, and *vice versa*!"

INTERESTING TO TOBACCO PLANTERS.

Some time since, in looking over your very welcome paper, my eye fell on a communication from "Upper Falling," on the subject of raising tobacco by the use of salt alone. I feel much interested in this matter, as it will, to a great extent, curtail the expense of raising that crop, the only one to which we farmers can now look to bring us any of the article now most scarce and needful to us—money. Having had some experience with the use of salt for tobacco, and wishing to contribute my aid and experience for the benefit of my brother farmers, I, by request, write you this, giving my endorsement, at least in part, to "Upper Falling." I used in 1860-61 alum salt—that being much cheaper than the Liverpool—in the following manner: In the month of March I applied from two to two and a-half bushels of salt to the acre on a Fall or Winter fallow, allowing it to remain exposed on the surface until some time about the last of April, or 1st of May, when, after applying my other manures—stable, or farm-pen, or guano, or superphosphates, as the case may have been, the land was prepared for the planting of the crop. The salt in this time had become saturated in the earth and did not interfere with the living of the plant, which I feared, if applied at a later date. But from "Upper Falling" I was mistaken in that as he as he applied it heavier and at a much later date than I did, with no bad effect. My observation was that my crop those two years was interfered with scarcely at all by the cut worm, (a very troublesome fellow ordinarily) and more especially was not affected, in the least (where the salt was applied) by fire, whilst in one of the above named years my neighbor's crop in a field adjoining mine, and his on high land and mine on the creek flat, was entirely ruined by fire. I can't say the salt added any thing to the growth of the tobacco, for I used freely other manures, just as I would have done had I not have put the salt there. I knew in another neighborhood four large planters, two of whom used salt with the same result as mine, whilst the other two living between those that had used the salt, had their crops almost totally ruined by fire. With these facts coming under my own observation, I can with confidence, endorse "Upper Falling" as to a preventive of fire, but will not undertake to say as to the fertilizing properties of salt yet, but will give it a fair trial next spring, Providence permitting. One thing I will say, that in 1860, the year I used it most freely, I made the largest crop of tobacco I ever raised from the same amount of land.—*Cor. Lynchburg News.*

Rank animal manures are not so good in a garden as lime, salt, clay, and vegetable manure. Lime corrects acidity, makes mellow and sweet the garden stuff, and is good generally.

Coal Tar a Preventive for the Striped Bug.

After years of experiment, and having tried, with only partial success, all the prescribed remedies, I have at length hit on a method to prevent the ravages of the striped bug on Cucumber, Squash, and Melon vines. It is simply bits of paper dipped in coal tar and laid on the ground close to the vines.

As good a way as any would be to take the leaves from some worthless book, (I used a Patent Office Report,) and dipping them in the tar, lay two or three pieces close to the plants, then with the foot draw a little earth on the clean end of the paper to prevent them blowing away, and the work is completed. The plan is a perfect success.

The first attack was made on a hill of watermelons, and before the papers had been on the ground twenty seconds, I counted as many bugs fly away from the hill, and on more than one hundred hills of vines in my garden, I have not seen a bug from the moment I applied the tar to the present time. Now this remedy may be known to many, but it is new to me, and at the risk of repeating a twice told tale, I send you the result of my experience, hoping that others, who have not tried this plan, may be assisted in their efforts to banish from their gardens that destructive pest, the striped bug.—*Cor. Gar. Monthly.*

A NEW PROTECTION FOR TREES FROM WORMS.—One Smith, of Temple, Tolano county, had been very much annoyed, and his trees injured by worms; said he would willingly give fifty dollars to know of a remedy to keep them down. We advised him to try one remedy, viz: To bind a bundle of the boughs or twigs of the red cedar around the body of each tree, with the butts uppermost. We have since heard that the experiment was entirely successful; though armies of worms made a charge upon them, he had a full supply of peaches and other fruit.

It may not be generally known that worms and insects of any kind are very rarely seen upon any of the varieties of the cedar family. We think that red wood and white cedar thus packed around the body of trees, would be very advantageous in protecting any kind from the miller or worms, to be applied near the ground every spring.—*S. W. Jewett, Kern Co., Cal., in the Country Gentleman.*

The largest seed garden in the world is said to be situated on the Delaware river, at Bloomsdale, Pa., occupying six hundred acres, and belongs to David Landreth & Son, of Philadelphia, and is under the personal supervision of the senior member of the firm.

Scientific.

A CHEAP BAROMETER.

Take a tall vial. Get 2 drachms of camphor, a half drachm of pure saltpetre, and a half a drachm of the muriate of ammonia, pulverized and mixed with about two ounces of proof spirits. The tube is usually suspended by a thread near a window and the functions of its contents are as follows. If the atmosphere is dry, and the weather promises to be settled, the solid parts of the camphor in the liquid contained in the tube will remain at the bottom, and the liquid above will be quite clear, but on the approach to a change for rain the solid matter will gradually rise, and small crystalline stars will float about in the liquid. On the approach of high winds, the solid parts of the camphor will rise in the form of leaves, and appear near the surface in a state resembling fermentation. These indications are sometimes manifested 24 hours before the storm. After some experience in observing the motions of the camphor matter in the tube, the magnitude or a coming storm may be estimated, also its duration, inasmuch as the particles lie close together on that side of the tube that is opposite to that from which the coming storm will approach. The cause of some of these indications is as yet unknown, but the leading principle is the solubility of camphor in alcohol and its insolubility in water, combined with the fact that the drier the atmosphere the more aqueous vapor does it take up, and *vice versa*. Here, then, is a storm glass so cheap that the poorest can afford to have one, and simply as a matter of curiosity, to say nothing of convenience, it is well worth keeping.—*Journal of Applied Chemistry*.

THE MOISTURE IN THE AIR.—One of the most curious and interesting of the recent discoveries of science is, that it is to the presence of a very small proportion of watery vapor in our atmosphere—less than one half of one per cent.—that much of the beneficent effect of the heat is due. Then rays of heat sent forth from the earth after it has been warmed by the sun would soon be lost in space but for the wonderful absorbent properties of these molecules of aqueous vapor, which act with many thousand times the power of the atoms of oxygen and nitrogen of which the air is composed. By this means the heat, instead of being transmitted into infinitude as fast as produced, is stopped or dammed up and held back on its rapid course, to furnish the necessary conditions of life and growth. Let this moisture be taken from the air but for a single summer night and the sun would rise next mornig upon a "world held fast in the iron grip of frost." But the power of absorption and of radiation in the same body are

always equal, so that at length it is poured forth into space; else our atmosphere would become a vast reservoir of fire, and all organic life be burned up.

"WHY does a razor cut better for being dipped in hot water?"

The microscope reveals to us the fact that the edges of all tools, instead of being perfectly smooth, are really toothed like a saw. Now, when the razor is dipped in hot water, it causes these little teeth to expand, thus rendering the distance between smaller, and consequently giving the razor a smoother edge. At first thought it might seem that the teeth would expand the same distance in every direction, thereby leaving the edge in exactly the same condition as it was before its "hot water bath." But when we consider that the base of the tooth is thicker than the edge, the explanation is clear; for the former will expand a greater degree than the latter, thus making the distance between the teeth small; or, in short, making a finer saw. We all know that the finer the work to be done, the finer must be the saw employed; hence, when we wish to saw our whiskers (how few are conscious of doing such an act!) we resort to the best means of sharpening the instrument—dipping it in hot water.

HOW TO PURIFY RANCID LARD.—A correspondent of the *Country Gentleman* says: I had some 50 lbs. rancid lard, which was valueless as it was. Knowing the antiseptic quality of the chloride of soda, I procured 3 ounces, which was poured into about a pailful of soft water, and when hot the lard added. After boiling it thoroughly together for an hour or two it was set aside to cool. The lard was taken off when nearly cold, and was consequently *boiled up*. The color was restored to an alabaster white, and the lard was as sweet as a rose.

SAVE YOUR OIL.—Put the wick into the lamp, and fill the latter about half full with coarse salt, and then put in about 1 inch of oil, and it will be found that a great saving will be the result. The salt wastes gradually away during the burning, and must, therefore, be renewed from time to time. The light is purer and more brilliant than without the salt, and the wick requires no snuffing.

Vick's Illustrated Catalogue and Floral Guide.

This Catalogue for the Spring of 1867, has just appeared, and should be in the hands of every Florist, especially the young. It embraces a hundred pages, embellished with seventy cuts of the choicest flowers, with directions for sowing and management of the same, and a handsomely colored frontispiece. Price 15 cents. Address James Vick, Rochester, N. Y.

From A. M. Purdy—Descriptive and Retail Catalogue of Small Fruits and other stock, for sale at South Bend Nursery and Small Fruit Farm, South Bend, Indiana. It contains information as to planting, growing, marketing, &c.

THE MARYLAND FARMER

AT \$1.50 PER ANNUM,
PUBLISHED ON THE 1ST OF EACH MONTH,
BY

S. SANDS MILLS & CO.
No. 24 South Calvert Street.
CORNER OF MERCER,
BALTIMORE.

S. SANDS MILLS, } PUBLISHERS AND PROPRIETORS.
E. WHITMAN, }

BALTIMORE, FEBRUARY 1, 1867.

TERMS OF SUBSCRIPTION:

\$1.50 per annum, in advance—6 copies for \$7.50—10 copies
\$12.00.

Revision of our Rates of Advertising.

The extended circulation of our *Farmer*, with the increased expense necessarily attending its publication, admonish us that the very low charges heretofore made for Advertising is far inadequate, as a remuneration, for the heavy outlay incidental to publishing a Magazine like ours. The prices charged for the past three years were the same as established by our *Rural Register* long before the war, when work and material were nearly one-half less. Notwithstanding the increased rates, our terms are still lower than any similar journal in the country, at the same time we offer equal inducements—as our old advertising friends can testify. The following is our new Schedule of Rates for 1867:

1 Square of 10 lines or less, each insertion.....	\$1 50
1 Page 12 months	120 00
1 " 6 "	75 00
½ " 12 "	70 00
¼ " 6 "	40 00
1 " Single insertion.....	20 00
Each subsequent insertion, not exceeding four.....	15 00
½ Page, single insertion	12 00
Each subsequent insertion, not exceeding four.....	8 00
Cards of 10 lines, yearly, \$12. Half yearly, \$7.	

Collections on yearly advertisements made quarterly, in advance.

TO ADVERTISERS.

Our friends desiring to avail themselves of our advertising columns, as a medium of extending their business, are requested to send in the copy by the 20th of the month, as we are compelled to put the last advertising form to press by the 25th, so as to enable us to issue promptly by the 1st.

POSTMASTERS.—Postmasters are authorized to act as agents for the "*Maryland Farmer*"—to whom a liberal discount will be allowed.

Maryland Farmer—Fruits and Vegetables—Retail Prices in Baltimore Market.

The following we extract from a letter of an esteemed correspondent at West River, Md. We thank him for the suggestions and shall in the future adopt them.

As I always read the "*Maryland Farmer*" with much interest and, I trust, improvement, I hasten to enclose the amount of my subscription for the new year. I regard the *Maryland Farmer* as the most useful and best conducted agricultural paper in our country, for its price, that has fallen under my observation, and most sincerely hope that it is meeting with the encouragement and success which it so well deserves. I have for some years been a subscriber to several Northern agricultural journals, at a higher cost than yours, but do not find them as well adapted to our more Southern system, views and wants as the "*Maryland Farmer*."

As the growing of vegetables and fruits is becoming an important interest with us, and will greatly increase for the future, as people are beginning to find out that our lands and climate are admirably adapted to their production, I would respectfully suggest that you should devote more space to their consideration. It might also answer a good purpose, especially to your country readers, if you would give in each number a Price Current of the retail markets in Baltimore.

There is something essentially wrong in your system of buying and selling country produce, which loudly calls for reform. The wholesale market for fruits and vegetables is lower in Baltimore than in any other of the cities, whilst the retail market, as a general thing, is higher. This condition of affairs is injurious to both the producers and consumers, and benefits alone the *Hucksters*. The producer might feel some satisfaction in receiving low prices for his fruits and vegetables, if he saw something like corresponding prices in the retail trade, but it is rather hard for him to know that he seldom gets more than one-quarter or one-third what his productions bring in the market.

THE MARYLAND FARMER.—A correspondent remitting his subscription to the "*Farmer*," from Santuc P. O., S. C., writes:

"I have just seen a number of the "*Maryland Farmer*" and am so pleased with it that you may hereafter consider me one of your subscribers—enclosed find \$1.50. I am thoroughly of the opinion that your "*Farmer*" will supply a want which farmers in this section of country so much need. The revolution which has left us in poverty must be followed by a revolution in our system of farming.—We must learn to plant less, plough deeper, cultivate better—and how to do this to the best advantage, and with the greatest economy, the *Maryland Farmer* is competent to teach us."

A correspondent at Hanover county, Virginia, propounds the following questions:

1. Is not fresh manure from the stable to top-dress before summer—as economical as making compost?
2. The best way to kill moss in Cranberry patches—to flood with water or pull up with forks?

TILDEN TOMATOE.

KENT COUNTY, Md., Jan. 16th, '67.

Messrs. Editors of Maryland Farmer:

Seeing an article in the January number of your Magazine, taken from the *Gardener's Monthly*, and written by R. Sinclair, of your city, in reference to Tomatoes, (particularly the Tilden,) I thought a line or two from one who raised them last season for the first time would not be amiss, particularly as the author has requested any one who has raised them, and can give them a better reputation, to report.

Having been a subscriber to your Magazine for some time, and, in looking over the advertisements saw the Tilden Tomatoes advertised by Messrs. Emory & Co., of Chicago, Illinois, and were so highly recommended by a number of celebrated gardeners, (and among the number the editor of the *Gardener's Monthly*,) that I sent for four papers of the seed—for which I paid fifty cents each, and will now give you my opinion of the Tomato as compared with the Large Red—the only other variety that I planted, except the Pear-shaped, for Pickles; and, I believe, the Large Red is generally considered a very prolific variety.

I sowed the seed of the Large Red under glass February 23d; transplanted under glass March 20th; planted out April 20th. The first that ripened, July 4th.

Tilden—sowed seed under glass March 30th; transplanted under glass April 26th; planted out May 15th. The first that ripened July 10th.

They were both cultivated in the ordinary manner, without either pruning or trellising—both matured from the same compost heap, and in the same manner, and, as near as we could come at it, the same quantity given to each. The Large Red, I will admit, produced more fruit, numerically speaking, than the Tilden. The earliest and largest were very irregular and rough—the balance were small and smooth, and they ceased bearing about the first of September.

The first that ripened of the Tilden were much larger than any of the others and as smooth as an apple, and continued of a very fair size and perfect form until they ceased bearing, which was after the frost had killed the vines, and by far the most preferable as regards flavor and solidity for cooking, and gave me fully as many in measure as the Large Red. I retailed bushels of them daily, and every one who bought greatly preferred them to any they had seen. Judges pronounced them a very superior Tomato for their purpose—being so smooth and solid.

I agree with Mr. R. Sinclair that we are very frequently humbugged in seeds, (and that I have been a subject more than once I will not deny.) Also, that there should be some method devised to stop it,

and only wish there could; but in this case, I am satisfied that he did not get the Tilden Tomato seed pure. If he did, I have got some other kind—for his and mine are certainly very different.

The Monumental Tomato that he speaks of must be a very fine variety, and we will try and procure some of the seed—for I make the cultivation of the Tomato a speciality, and expect to plant at least ten acres the coming season; would like to have the best variety known. Not getting the Tilden seed until late, could not test how early they could be ripened, but expect to have them this year by the 15th or 20th of June.

A SUBSCRIBER.

LETTER FROM A VIRGINIA PLANTER—THE FREEDMEN.

The following letter from a distinguished Virginian, we copy from the "*Lynchburg Virginian*."

Having closed my operations for the year, under my contracts with freedmen as *tenants*, I concluded to inform you of the results, as you have heretofore, kindly, inserted in your paper several communications from me on the same subject. As anticipated, the results have been any thing *but favorable*—stock loaned greatly depreciated in value, and not enough made to remunerate me for advancements, and, if possible, the freedmen in a worse condition than at the commencement of the year. All now agree that as tenants they are *worthless*, and, as laborers, under any system, not to be compared to the white man, or ever will be. There may be a few exceptions, but very few, in all Virginia. I look upon the black population of Virginia as a disease for which there is no cure, unless by its entire removal from among us, it will continue as a drawback upon our prosperity as long as there is a remnant left, which in the course of time will be removed by every suffering that flesh is heir to, until the remnant left will be as one to a thousand. They are a lower class of persons, and never can be elevated to take their stand in society of high grade, and must, in coming into contact with the white race, meet the fate of the Indian, buffalo and monkey. I regret to say that our prospects are not at all better in the coming year than that just passed out; with such material as laborers, the results of farming are not more than equal to expenses, with accumulated debt by interest and taxes, State and Federal. Unless a radical change takes place, a large portion of the State will pass under the hammer, and at very low figures. My only hope is from distant purchasers, who will come among us with money and habits of industry, being owners of the soil. Our tenant system with white men *leaves no surplus*, and the land impaired in value. Those who own land, and work it with their own hands, are very

few in number compared with the whole, and they are prosperous. The whole country will have to be put upon that footing; when that is the case, prosperity will return, and not until then—our situation is one of great trial and perplexity. The relation which exists at this time with the government, our own previous habits, under a system of slavery, encumbered by debt and accumulated taxes, make it a burden, under the most favorable circumstances, we might hope to recover from.

MAYO CABELL.

The Rockbridge Alum Springs, Va.

This famous watering place has been growing in repute for the last 30 years, and very rapidly for the ten years preceding the war. There is not probably a mineral water in Virginia, or the whole country, which has established such a reputation for remarkable curative power in such a great variety of chronic diseases. And the ingredients in the water being such as rather to preserve it than to cause its deterioration, when bottled, (as occurs with so many mineral waters,) it is thus brought within reach of all, however remote from the fountain.—Many of our citizens, both of the city and State, visited the Alum Springs last summer, and they bear willing and emphatic testimony to the remarkable virtues of the water, as well as the attractiveness of the place as a most agreeable summer resort. As will be seen from the advertisement of the Proprietors, this medical water is kept constantly on sale in this city, fresh from the Springs, by the old established house of Coleman & Rogers. All parts of Maryland and of adjacent States, whose commerce is naturally with Baltimore, and especially the great West, penetrated by our railroad and its connections, will more cheaply and certainly and quickly procure their supply of this valuable water from Coleman & Rogers, than to order it from the Springs or from Richmond. We have this from the proprietors themselves. They have reduced the price of the boxes with the new year.

British Periodicals.

We take the opportunity offered by the first month of the new year, to call the attention of our readers to the valuable reprint of the great *British Review*, by the Leonard Scott Publishing Company, of New York. These periodicals are the recognized exponents of certain great divisions of public sentiment of Great Britain, and of great value to all who desire to keep informed of the state of feeling in that powerful empire.

The *London Quarterly Review* is Conservative in politics and religion. The *Edinburgh* represents the great Whig Party of the nation, the party of gradual and moderate reform. The *Westminster* is Radical in politics and infidel in religion. Without following an particular school of infidelity, it is sometimes Pantheistic, sometimes Deistic, sometimes Atheistic, but always Anti-Christian. The *North British* is the organ of the Free Church of Scotland, and as such is devoted to the voluntary system in religion, opposing the consolidation of Church and State. In politics it is liberal without being radical. *Blackwood's Magazine*, is a High Church and High Tory publication, and a most able defender of its principles.

The terms for subscription to these publications are lower than the cost of importing one of them from England, and we cordially commend the enterprise to our readers. Those who desire to subscribe can do so by applying to the Leonard Scott Publishing Company, 33 Walker st., N. Y.

THE WILLOW'S RESPONSE.

BY C. BILLUPS, OF NORFOLK, VA.

Thou tender sympathizing friend,
Thy questions have been heard;
An answer now, I'll give to thee,
That truth be not deferred.
When Adam breathed, arose and walked
Amid the garden green;
I too had form and strength and life,
And bore a cheerful mien.

But man transgressed, all nature moaned.
The curse pronounced was deep;
And nature's God a season long
Ordained, that I should weep.
I wept that death, till then unknown,
Should stalk the world abroad;
Unfold his dark and bloody flag,
Proclaim himself a god.

I weep that winter e'er should come
And breathe its blighting blast,
That righteous emblems—*lilies white*,
Should fade and die at last.
I weep to hear the story sad
That roses tell in bloom;
Whose voices small, whose fragrant sighs,
Proclaim "death is our doom."

I weep that man, God's noblest work,
Should spill his brother's blood;
Till widows and their orphan's cries
From sea to sea are heard.
Who would not weep, speak out ye maids,
Ye birds, ye trees, ye flowers;
I heard no voice, no answer come
From maids, nor birds, nor bowers.

Kind sympathizing questioner
I weep, but don't despair;
A brighter day is yet to dawn
The fairest of the fair.
The king of kings will rid our earth
Of pain, of death, of tears,
Then will I cease to weep, but wait
His praise through countless years.

Raleigh (N. C.) Progress.

WEIGHTS AND MEASURES.

The following figures show the number of pounds to the bushel of the articles enumerated, as follows.

Wheat.....60	Timothy Seed.....45	Turnips.....55
Shelled Corn.....56	Flax Seed.....56	Plastering Hair.....8
Corn in the ear.....70	Hemp Seed.....44	Unslacked lime.....80
Peas.....60	Blue grass Seed.....12	Corn Meal.....48
Rye.....56	Buckwheat.....52	Fine Salt.....55
Oats.....32	Dried Peaches.....38	Ground Peas.....24
Barley.....47	Dried Apples.....24	Orchard Grass.....12
Irish Potatoes.....56	Onions.....57	Herds Grass.....10
Sweet Potatoes.....56	Salt.....50	Millet.....45
White Beans.....60	Stone Coal.....80	Hungarian
Castor Beans.....46	Malt.....38	Grass.....65
Clover Seed.....64	Bran.....20	

A box 24 by 16 inches, 22 deep, contains 1 barrel.
A box 16 by 16½ inches, 8 deep, contains 1 bushel.
A box 8 by 8½ inches, 8 deep, contains 1 peck.
A box 4 by 4 inches, 4½ deep, contains half gallon.
A box 4 by 4 inches, 2½ deep, contains 1 quart.
Ten gallons pickled onions, 85 pounds.
Ten gallons of sour krout, 81 pounds.

MARYLAND FARMER.—A correspondent at Hampton, Va., writes us January 1st. Let our friends everywhere do likewise.

"I herewith renew my subscription to your ever welcome 'Farmer.' No farmer can invest \$1.50 to a better advantage than to take the Maryland Farmer. It has my good wishes, and I hope your subscription list may be doubled this year, and to aid its accomplishment, I send you another name and enclose \$3."

CRAWFORD'S STUMP AND ROCK EXTRACTOR AND ELEVATOR.



This machine is acknowledged by those who have had practical experience in its use for different purposes, as the machine that will be adopted for all purposes of heavy lifting and moving, as well as many of the lighter kinds.

Fig. 1 represents the machine detached from its bearing, and consisting of a Rocking Beam, [A], connected with a Ratchet Wheel [B] by Pauls [CC] and Cross Hangers [DD], so that when the beam is rocked by means of levers [EE] the wheel is kept in motion, carrying round with it a Sprocket or Chain Wheel [F], to which it is cast solid, and over which a heavy Chain [G] passes, and is kept from slipping by flanges projecting between the links, so that the more weight there is attached, the more securely it is held to the wheel; while any length of chain may be used, and a body raised to any height. To double the power and strength of the machine, a heavy iron Pulley [H] is attached, as seen in the cut.

To reverse the action of the machine, Spiral Springs [II] suspended from the arms of the rocking beams are hooked to the cross hangers, and with the same motion of the levers the wheels turn back, lowering the weight as far as necessary.

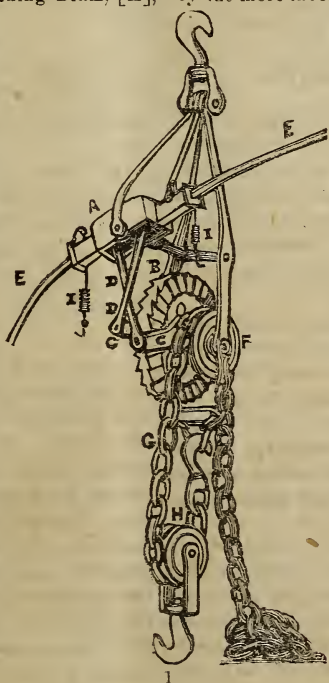
Fig. 2 represents the machine suspended by Sheers [SSS], showing the usual method of extracting Stumps so they can be left in any position desirable. Small

Drags or Shoes [TTT] are attached to the feet of the Sheers, (by irons furnished with each machine.) so that with two Connecting or Drag Chains [UU], the whole is moved by a horse or oxen, from stump to stump, or rock to rock, requiring but little adjusting at each operation. Or, it may be moved by the more laborious mode of lifting it by pins driven through the sheers about two feet from the lower end. These pins should be attached, to each set of sheers.

Three Braces [VVV] are attached to the sheers (by irons furnished for the purpose,) to keep them in their relative positions while moving, which should be detached when the machine is in operation with a heavy load, (unless the drag chains are kept hooked, which is not always convenient among latteral roots,) when a little adjusting of the drags is sometimes necessary.

A Rope [W] is attached to the handles of the levers (when it is necessary to hang the machine high), so the operator can still stand on the ground while working them. These ropes should always be attached, as with two men, the machine works easier by the ropes than by the handles, except when great weight is attached.

A wrapping chain is passed round the trunk of the stump, or a large side root, through the eye or hook of the pulley for the double purchase, or the chain hook for the single purchase, and



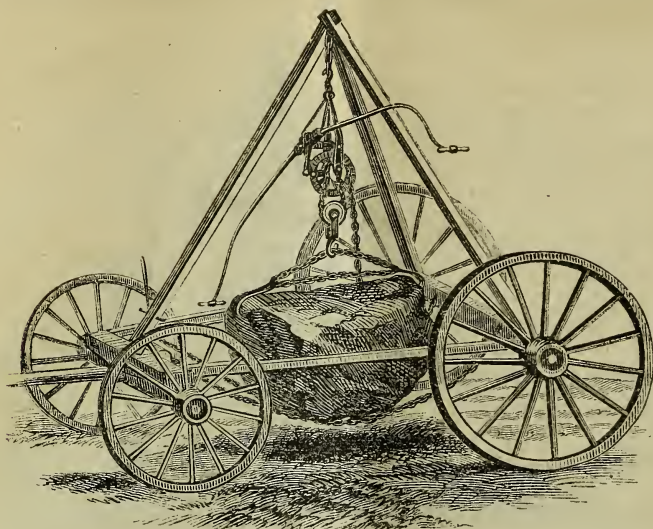


Fig. 3.

fastened by a self-fidding link or ring, on the end of the chain, and the machine is ready to operate. Or the grapples which are used for both rocks and stumps, can be hooked to opposite sides of the stump under the roots, and attached to the machine as seen in Fig. 3. The sheers are the best rig for very heavy loads, and owing to its utility and cheapness, should be first adopted, and others added as circumstances require.

Fig. 3 represents the machine mounted on

wheels, so that a rock or other heavy body may be extracted or raised from the ground, and moved off at once. The carriage is easily and cheaply constructed by a man of common ingenuity, and the wheels may be used on the farm or road, when not needed with the machine.

Prices—No. 1, weight of iron about 400 pounds, \$125 00; No. 2, weight of iron about 550 pounds, \$165 00; No. 3, weight of iron about 800 pounds, \$205 00.

Cultivation of the Ground Pea.

F. A. Schwill, Seed Grower, of Cincinnati, Ohio, writes to the *Southern Cultivator*, on the subject of the Ground Pea:—In reply to an inquiry in the October number of your valuable paper, I will give you what I know, and what has come under my observation of the culture of the Peanut, sometimes called Ground Pea, Pindar, &c. "*Arachys hypogaea*," a native of Africa.

We have always found an early, warm, light loamy hill side, the best adapted for its cultivation. After plowing the ground well, it should be ridged up slightly, two to three feet apart, and the seed dropped nine inches to a foot apart in the furrow, and not covered more than two inches deep. In this climate we plant it as early as the weather is suitable, as the plants do not mature until late in the season.

If it be done carefully, the young plants may be worked by a double shovel plow, though weeding and hand hoeing is much preferable, the plants are very tender and easily disturbed. The vines are earthed up occasionally, and lower blossoms covered with a light coat of earth, as the fruits are formed

and developed better in that manner, and will yield from sixty to ninety bushels to the acre, and are generally ripe about the last of October in this latitude.

The "seed" must be of the preceding year's raising, or it will not germinate, and should be preserved in the pod or shell. There are several varieties. In this market the "Wilmington Peanut," with the thin shell is the most salable and commands the highest price.

LEAVES FOR BERRIES.—For berries, there is nothing like leaves—rotten leaves. So the next best thing is chip manure. This is probably a habit acquired from nature. But leaves may be improved—by absorbing manure. Use for bedding in stables; but do not get much manure in, unless your soil is quite poor. Let the top-soil especially have a coat of this kind. It is the best mulch in the world, only surpassed by cut-straw in case of great heat, the straw (white) reflecting the heat. Leaves are very porous, and will readily take up food for plants. But their fertilizing principle seems to be the best suited to the growth of fruit.—*Colman's Rural World*.

Horticultural.

FRUITS AND FRUIT TREES OF THE MIDDLE STATES :

Propagation, Influence of Stocks, Diseases, and Enemies.

BY WM. C. LODGE, CLAYMONT, DELAWARE.

The experiments of centuries have failed to establish any rules by which varieties of our standard fruits, the apple, pear, peach, cherry, and plum, may be perpetuated with certainty from the seed. Seedlings often reproduce themselves two or more successive crops, particularly when the seed is of the wild stock, or possesses its chief characteristics. Or, in case the tree is completely isolated from the pollen of other varieties, its kind may be perpetuated from the seed; but the inclination to vary or "sport" from the parent is so decided, that all who plant with the expectation of good fruit use grafted or budded trees. It is well known that seedlings from our best and most highly improved varieties depart more widely from the original than those from inferior grades, while the young trees evince less vigor, and decline at an earlier age.

The French and Germans have, of late years, repeated an almost exhaustive series of experiments toward determining a system by which excellence may be obtained with certainty from fruit seeds.— Their experiments, though failures as to the object proposed, have proved the fact that some one or more seeds in every perfect fruit have a stronger tendency towards perfection than other seeds in the same specimen, and that, while such seeds as produce in their first crops inferior fruit to their parents continue to deteriorate with every successive planting, the others continue in the same ratio in the improving course. It has also been proved that trees grown from the improving seeds bear fruit at an earlier age, with every successive crop of trees, while those grown from the deteriorating seeds require, with every crop, a longer period of growth before showing fruit. The natural inference from this fact is, that the better kinds endure a shorter period proportioned to their age before fruiting. Such, however, has not been shown with certainty to be the case.

The experiments of the celebrated Belgian pomologist, Van Mons, with the pear, prove the different tendencies of seeds from the same specimen fruit.— He, however, instead of carefully selecting only the few improving seedlings from improving parents, planted *all* the seeds of such varieties as exhibited the improving tendency, and continued planting thus through eight successive generations. He found that in the eight generation his best kinds fruited at

the age of four years, while those of an opposite tendency required a much more extended period to bring them into bearing.

The results of these experiments established the fact that the better kinds are more likely to produce good fruit from the seeds than the wildings. Indeed we have never known good fruit to spring at once from wildings with crab tendencies. Excellence is progressive, while in some cases the opposite, from good to worthless, is accomplished in a single generation. This, however, is more particularly the case in budded or grafted fruits, the seedlings seeming to follow the type of the original stock rather than that worked upon it. It is true that many of our best varieties are accidental seedlings; yet, for all we know to the contrary, they may have attained their excellence by a course of gradual improvement, going on unnoticed for an indefinite time.

Change of *locality*, in case the soil or climate, or both, be different from those in which the parent grew, produces great changes in the seedlings.— Trees of the same variety, planted in different localities, often produce fruit quite dissimilar.

Fruit will deteriorate in quality, and the trees become less enduring and more uncertain bearers, from being grown successively in the same ground. Many of the finest varieties have become in the early settled districts, so worthless through this cause that their culture has been wholly abandoned. Removed to a new locality they flourish as finely as ever. In 1848, the father of the writer sent some Rambo apple trees from his residence in Delaware, to a farm just cleared from the woods in Indiana. He has since received specimens of their produce, so perfect in size, color, and flavor, as scarcely to be recognizable as the same variety with those grown here, from trees planted at the same time, and procured from the same nursery.

BUDDING AND GRAFTING

Are now universally resorted to when varieties of highest excellence only are required for planting.— Budding is performed with most ease, greatest certainty, and least injury to the stock and future tree, when it is but one year from the seed or slip, or so soon after as it becomes of sufficient size for the operation. As a general rule, budded trees attain a greater size, live longer, and grow more symmetrically than grafted trees, unless the graft be inserted in the root, when it will grow about the same as a bud, other conditions being equal. The insertion of a bud does not check the growth of the stock, nor is it the tree cut or bruised in the operation so as to leave a scar that may ultimately become diseased and interfere with its thrift. Budding is performed in the latter part of summer or early autumn; grafting, in the early spring; therefore, should the

bud fail, we may resort to the graft without loss of time.

Stone fruits are generally budded, and seed fruits grafted; though cherries are often grafted and do well. The peach, plum, nectarine, and apricot rarely succeed when grafted, though they grow readily from the bud. The apple and pear grow and flourish equally well from bud or graft. A graft will grow more vigorously than a bud, and come earlier into bearing. Large trees are grafted, both because the process is more expeditious, and less time will be lost in fruiting. On trees that have been some time in bearing, a graft will sometimes fruit the next season after insertion, often the second season, though such early bearing is injurious to the future growth and vigor of the tree.

STOCK FOR FRUIT-BEARING.

When the natural stocks of the apple, cherry, peach, or pear cannot be easily procured, or where the soil is unsuitable, or when it is desirable to dwarf the tree so that it may occupy less space, or to bring the tree into bearing sooner than it would fruit upon its own roots, other stocks, or roots of a different character, are used with advantage. For the apple, paradise roots and the white thorn may be used; for the cherry, the mahaleb; for the peach, the red plum; and for the pear, either quince, thorn, or apple.

THE INFLUENCE OF STOCK

upon the fruits of budded or grafted trees is not yet fully understood by our first scientific pomologists. Many fruit-growers do not take the stock into account further than as a passive vehicle, through which the sap is drawn by the leaves, giving it no share otherwise in the elaboration of the fruit. While we admit the general rule, that fruits are produced most perfectly on their natural roots, we know there are modifying circumstances which render different stocks preferable. We have observed that, with successive plantings, some quality of the soil essential to the well being of either fruit or tree, or both, becomes exhausted; that frequently the first generation of trees endures longer, bears more abundant crops, and fruit of better quality, than succeeding generations planted in the same ground, under the same circumstances. The peach may be succeeded by the apple, and the apple by the pear, and each kind produce healthy fruit upon healthy and vigorous trees. But plant either peach, apple, or pear, for three generations successively, and the result will be a great deterioration in the quality of the fruit, a decrease in quantity, and a shortening of the life of the trees. It therefore becomes necessary to substitute, so far as practicable, other roots different from the natural one, if we wish to continue to grow good fruit upon the same ground.

On the principle that the vigorous growth of the tree is at the expense of its fruitfulness, and, on the other hand, that prolificacy interferes with a vigorous growth, we understand that to work a strong growing scion upon a weakly stock will bring the tree into fruiting at an early age. But why the stocks should hasten or retard the period of ripening, or how it changes the color, flavor, or size of the fruit, is not so easily shown. We know that a few of our best native varieties of the pear, when grown upon the quince, are more perfect than upon their own roots, and that most of the superb foreign varieties can only be successfully grown by us on quince stocks. All we know about the cause is, that the quince roots give out a more meagre supply of sap, so affecting the growth of the tree that it becomes and remains a dwarf. It is also thus brought into bearing at an earlier age, producing larger and more certain crops of perfect fruit, while the want of complete harmony between stock and scion has a tendency to shorten the existence of the tree. All our standard fruits can be grown with more or less success upon other than their own roots.

THE APPLE,

our hardest, most useful, and most enduring fruit succeeds better on its own roots than any that can be substituted for them, in most localities. The white thorn has been used with advantage for the codling and a few other varieties, and beautiful dwarfs can be formed by working the apple upon paradise stocks. But for orchard culture we prefer the natural roots, which may be more easily and cheaply obtained than any other. Such, however, is not the case with the favorite fruit of the middle and northern States—the rich, delicious

PEAR,

whose grace of form, beauty of color, and high flavor render it only second to the peach, while the hardiness and great endurance of the tree, and the little care it requires to perfect its annual tribute of fruit, as well as the high market value of the same, make it the most profitable. It will adapt itself to every variety of climate, and although it delights in a heavy or clay soil, it will do well in any soil where its roots do not come in contact with too much water.

The pear is, however, difficult to propagate from seed, and requires a longer period before bearing than any other fruit; hence the scarcity of young trees, and the comparative high prices they command at the nurseries. For this reason, chiefly, different stocks are so commonly used on which to grow the pear, though many other advantages result from the use of stocks of a different character from its own.

In the early settlement of the country very few

pear stocks could be obtained, and various experiments were tried on the haw, apple, and thorn with partial success. The thorn proved to be the best adapted to the purpose, and several old moss-grown trees planted about the year 1710, on the farm of the writer, have borne fruit until within a short time. The thorn here used is the large variety known as the "apple thorn," which bears a berry about the size of a small red plum, and is quite palatable. The thorn gives longevity to the tree, while it detracts from the flavor of the fruit. It has generally been abandoned since the quince has been introduced in its stead.

The apple is rarely used to give roots to the pear. In a few instances, however, the effect of the apple roots upon the pear has been astonishing. Mr. Perkins, of New Jersey, in experimenting with various stocks, used the scion of a superior variety of the hedge pear, thick-skinned and late in ripening. On apple roots he found the pear grown to more than twice its largest size on its own roots, and when carefully picked and house-ripened, proved to be the finest winter pear, being a fine orange color, with tender flesh, exceedingly rich and juicy. We have seen specimens weighing over a pound, perfectly free from blemish or fault; and being so pleased with the fruit, we worked it upon some old standard trees, from which we now gather large annual crops of hedge pears! We have since worked it upon both apple and quince, and await their fruiting with interest.

Since the introduction of the quince for pear stocks, all others different from the standard roots have gone out of general use. The variety of quince proved most suitable is the Angers, a foreigner, now so perfectly naturalized that pears are grown upon it in the highest state of perfection. It is readily propagated from the slip, which may be laid in the spring, and inoculated with the pear in the autumn succeeding. It becomes a dwarf tree, and commences bearing in its third or fourth year from the slip. By a system of pruning it may be grown into almost any shape or size desirable, fitting into corners or angles, or flower plat, or any out-of-the-way spot on which the sun occasionally shines, always proving both useful and ornamental.

THE CHERRY.

delights in a heavy soil a high and dry locality. For many years after the first settlement of the country the favored home of the cherry was the "Delaware Highlands"—a tract between Wilmington and Chester, where the hills sweep down gently to the river's edge, and catch the first warm rays of the morning sun. The markets of Philadelphia and New York were, for more than half a century, supplied with cherries from this locality: and well-

grown trees of improved varieties have been known to represent a capital of from one to two hundred dollars each, in the transfer of real estate, the produce of the trees averaging thirty to forty dollars each, annually. John Brown established his nursery and fruit farms here about the year 1780, and the noblest cherry, pear, and apple trees now standing in the neighborhood are of his planting. Generations of trees have since been planted and have passed away, while these veterans still flourish in their pride and beauty, and yield annually large crops of superior fruit. While the old trees preserve a uniformly healthy habit, young trees of the same variety, even when budded from these, become diseased—the bark of the branches cracking and leaving great black ruptures, which affect the growth and finally destroy the tree. This we now remedy by working the cherry on the mahaleb stock, which brings it earlier into bearing, and, like the quince, has a tendency to dwarf the tree. By judicious pruning, the mahaleb may be equally adapted to dwarf or standards. When pruned from the roots upwards, good-size trees may be formed, almost rivalling the cherry on its own roots; while pressed from the top downward, it may be shaped into a dwarf of any requisite size or form. The cherry is now on the decline with us.

(TO BE CONTINUED.)

BLACKBERRIES.—A correspondent of the Working Farmer states that William Parry of Cinnaminson, N. J., has twenty-five acres planted with blackberries for market, and some of his neighbors have an equal number. At Hammonton 150 acres are planted, producing on an average 80 bushels to the acre.

CRANBERRIES.—William Parry, in a paper read before the Pennsylvania Hort. Soc., makes some interesting statements, some of which we quote and condense as follows: He thinks there is at least one million dollars invested in the culture of cranberries in the county of Ocean; and in Monmouth and Burlington counties, the culture is still more extended. At Shamony, portions of bog have yielded at the rate of 220 bushels per acre, which, at the price last fall, would amount to \$1,250. W. R. Braddock of Medford, has about 100 acres, twenty of which yielded last year an average of 100 bushels per acre, amounting to \$3 per bushel, clear of all expenses, or \$6,000 from the 20 acres in berying. T. and A. Budd purchased a tract of cedar swamp, five years since, at \$10 per acre, for which they have since been offered \$600 per acre. Last year 28 acres of it yielded 1,800 bushels of fruit, or 67 bushels per acre, and amounted to \$7,200, at \$4 per bushel.—*Country Gentleman.*

Two American sovereigns—Smo-king & Jo-king.

THE FRUIT GARDEN.

Established orchards, on thin or impoverished soil, may be renovated in the following manner: If a tree has been planted, say 15 years, and attained the size we might expect in time—get, say ten feet from the trunk, and dig a circle two feet deep all around it, and fill in with a good compost; the effect the next season will be quite marked. If the tree is older or younger, the distance to start with the circle from the trunk will of course be proportionate. A top-dressing will also be of great assistance, as well as a vigorous pruning out of all weak or stunted branches. Moss and old bark should also be scraped off, and if the trunk and main branches can be washed with a mixture of sulphur and soft soap, much advantage will follow. Old decayed bark on fruit trees is always a sign of a want of vigor. When a tree is growing thriftily it cracks this old bark so freely, as to make it easily fall off; but when the tree is weak and enfeebled, the bark often becomes indurated before it has got cracked, and in this state the tree becomes what the gardeners call “hide bound,” and artificial means must be afforded to aid the tree to recover. In the cherry and plum trees this is easily done, by making longitudinal incisions through the bark with a sharp knife. In the peach and apricot also, this process has been employed with advantage, in spite of the learned theories which have attempted to show up the absurdity of the practice.

Sometimes fruit trees are unproductive from other causes than poverty of the soil, or neglect of the orchardist. They often grow too luxuriantly to bear well. In this case root-pruning is very effectual, and is performed by digging a circle around the tree, with the circle made close to the trunk of the tree. A fifteen year old tree, for instance, may be encircled at five feet from the trunk. No rule can be laid down for this; judgment must be exercised. If cut too close, the tree may be stunted for years, and if too far, it will not be effective. The aim should be to reduce the roots about one third.—*Thomas Meehan, Ed. Gardener's Monthly.*

DITCHING VS. NATURAL DRAINAGE.—Artificial or Ditch Drainage makes better soil than we generally find in natural dessication. It makes it on the ground that drained soil brings into use elements which had long lain dormant, and which thus add to the fertility. It corrects the acidity, and mellow and ameliorates the soil in general, laying it open to the influences of the air and the heat. The wealth unappropriated before, is now made use of, and thus adds to the fertility—is equivalent to manuring.—*Col. Rural World.*

Sorgo Culture.

SORGO.

I notice that there is considerable said about Sorghum, how to plant it, &c. I will give my plan for preparing the seed for planting, which you may publish if you see fit. Putting what seed I wish to plant in a vessel, I pour on it boiling water enough to cover it, and let it remain twelve hours, or until the water becomes of the temperature of the atmosphere. I then fill half full of dirt an old pan, (no matter how many holes in the bottom,) and spreading a cloth over the dirt to keep the seed from mixing with it, I pour the seed, water and all, on the cloth. After spreading another cloth over the seed, I place over the whole a sod large enough to cover the top of the pan, and set the pan at the south side of the house. If it gets too dry, moisten by wetting the sod. In three or four days the seed begins to sprout. Then I have my ground ready, and by the time some of it has grown one inch long I plant, covering with moist soil and pressing hard with the hoe, and in a very few days the Sorghum is up.—*Cor. Rural American.*

SORGO.—M. Conard, of West Grove, Chester county, a practical Agriculturist, who has devoted much attention to the growing of the cane, and manufacture of Sorgo Syrup, gives his plan of planting and cultivating as follows:

Select, if you have it, a sandy soil with southern exposure. In general, good corn land makes good cane land,—sod is preferred. Plow deep, as early as the ground is in order. At middle of May pulverize thoroughly; plant in drills north and south, 4 feet apart. Time may be gained by scalding and soaking the seed until sprouts appear; cover lightly; thin out 8 to 12 inches in a row; when 18 or 24 inches high cut out the suckers; cultivate as corn, allowing no weeds to grow.

Two quarts of prime seed will plant an acre, which on good ground, may yield 200 gallons of Syrup and 35 bushels of seed. Cut when heads are cleverly turned brown.

A PLEA FOR SORGO.—Your remarks in favor of beets for sugar making, because the refuse feeds cattle and makes manure, will apply equally as well to the Chinese cane, its top and luxurious leaves are more eagerly devoured by milch cows than beets, even before their juices are pressed and the leaves of beets contain but little dry matter; then the bergass from the pressed cane may be used in the compost heap or as bedding for cattle. Beets require as strong a soil for a maximum yield as sorgo, although the latter may exhaust the soil more, but as its cereal crop is small it cannot destroy manure like Indian corn.—*Ex.*

SEASONABLE HINTS.

From the January number of the *Horticulturist* we glean the following hints:

WHAT GRAPES TO PLANT.—We have been asked to name the best varieties of grapes to plant. We should be glad to make a satisfactory reply by furnishing a *satisfactory* list; and were we younger, perhaps should attempt; but our present impression, after nearly half a century of experience, is, that we know little really of the different varieties of grapes. Of Catawba, Isabella, Clinton, and Concord, we may, perhaps, safely say their characteristics and values, adaptation to soils, &c., have been pretty fairly exhibited, and yet it is only recently that traits have shown themselves in the Catawba, which the mass of growers knew not of ten years ago. The Concord although by many called the "people's grape," and of late sent to the world by a "hundred dollar committee," from what we have seen this past fall, is certainly of doubtful character in its value as a grape to be grown where it has to travel long distances to market. While many are confident of Diana, Iona, Rogers 3 and 15, as grapes for dry wine purposes, yet strictly, the Catawba and Delaware are the only ones whose real values are known; and of these the former will not mature in some localities, and the latter has too often a disposition to cast its foliage before maturing its fruit, unless under a very high state of culture. Of the dark grapes for the making of the red wines, no one denies the superiority of the Norton's Virginia in quality; but as it is a difficult sort to propagate, growers of the plant do not urge it forward, but claim for Clinton, Ives', and others, a wine almost as good, and more abundant in quantity, while they are propagated with great rapidity. Fifteen or twenty years, with an experience in every State, and various sections of the States, we consider necessary to decide the value of a grape.

FRUIT GROWERS often make mistakes in attempting to secure too large a variety. It is much more profitable and satisfactory to cultivate well a few choice fruits of each sort, than a large number imperfectly. It can easily be ascertained from experience and observation what kinds are best adapted to any particular soil and climate. For a moderate sized place, where fruit is not grown extensively for market, but mainly for home consumption, it is easy to select varieties which will furnish fresh fruit for the table every day in the year. From three to five kinds, each, of our well established favorites of the various sorts of fruit, will secure this end. Indeed, if we were engaged in raising fruits for market, we should prefer to confine ourselves to as few varieties as practicable, leaving it for amateur fruit growers, and rich gentlemen farmers to experiment with the new varieties which are constantly added to our stock of fruits.

THE CAMELLIA.—Few plants are more beautiful in flower and foliage, none more universally admired, and perhaps none more easily managed by the gardener or owner of a greenhouse for their occupation; but as window or family house-room plants, they rarely furnish blooms, and are not desirable. A moist humid air is requisite to their perfect blooming and that is rarely obtained in a living-room.

GRAPEVINES may be pruned at any time this or the coming month, provided the weather is at a temperature above 40°. Although we prefer early autumn for the operation, yet the labor must be done; and if omitted in the fall, then the first period of warm, soft weather, such as often occurs in January, should be seized upon for the work. At this season, make the cuts at least three inches from the bud, as by so doing there will be less risk of injury thereto from drying and freezing.

It is a too common practice with farmers, and some professed fruit-growers, to prune apple, pear, cherry, and other trees in mid-winter. We do not regard the season as the correct or best one for the labor; and why, because if the operation is correctly performed, the cut made close to the bud or body, it is liable to dry hard, crack, and cause death or an enfeebled condition of the bud in the one case, or decay of the trunk or large limb in the other. Very rare is it that wounds made in winter heal over readily. If the work is not carefully performed at the first operation, that is, if to save the bud from drying, we cut an inch beyond it, then the whole has again to be gone over in spring or summer; or otherwise, on the end of each branch so pruned, we have a piece of wood to die and decay.

THE ANGERS QUINCE AS A HEDGE PLANT.—We have recommended various plants and trees for hedge purposes, and have often found cases where profit from the fruit was sought to be connected with the usefulness and beauty of the screen in the growth of a hedge. To this end, we have tried the Angers quince, and successfully. It is vigorous in growth; has short stout thorns; and the more it is clipped, apparently the more vigorous and beautiful it becomes. Its fruit is similar to that of the orange quince; and in our little experience the clipped plants have borne more abundantly and earlier than our orchard standards. It is certainly worth trying, and especially do we think so in locations where the soil is of a heavy clay nature, and not well drained.

Morning.

But mighty Nature bounds as from her birth,
The sun is in the Heavens, and life on Earth;
Flowers in the Valley, splendor in the Beam,
Health on the Gale, and freshness in the Stream.

THE GOLDFINCH.

Of all cage birds, this is one of the most delightful, alike from the beauty of its plumage and the excellence of its songs, its proved docility, and remarkable animation, whose body is almost always in incessant motion—now moving to the right and now to the left. Its song is shrill, agreeable, and heard during all seasons, excepting only at the period of moulting. It contains, besides many warbling and twittering notes, on which it dwells more or less, and the oftener the syllable *finch* is repeated the more it is admired. Some utter these notes only once or twice in their song, and others four or five times in succession. They also repeat airs, and the songs of other birds, but with difficulty; for they have not the same capacity as linnets and Canaries for these acquisitions.

Their docility is extraordinary, for they will even learn to fire small cannons and imitate death. They may also be taught to draw up their food and water in a little bucket.

Mr. Syme, in his excellent treatise on British Song Birds, gives the following amusing particulars respecting this species:—"The goldfinch is easily tamed and easily taught, and its capability of learning the notes of other birds is well known; but the tricks it may be taught to perform are truly astonishing. A few years ago, the Sieur Roman exhibited his birds, which were goldfinches, linnets and Canaries. One appeared dead, and was held up by the tail or claws without exhibiting any signs of life; a second stood on his head with its claws in the air; a third imitated a Dutch milkmaid going to market with pails on its shoulders; a fourth mimicked a Venetian girl looking out at a window; a fifth appeared as a soldier, and mounted guard as a sentinel; and the sixth acted as cannoner, with a cap on its head, a firelock on its shoulder, and a match in its claws, and discharged a small cannon. The same bird acted as if it had been wounded. It was wheeled in a barrow, to convey it, as it were, to the hospital, after which it flew away before the company. The seventh turned a windmill; and the last bird stood in the midst of some fireworks, which were discharged all round it, and this without exhibiting the least symptom of fear."

The Goldfinch is very generally distributed throughout Europe, occurring in most of the wooded and cultivated districts. Its song commences about the end of March, and continues till July or August.



It may often be found in company with linnets, whose flight it somewhat resembles.

Proceedings of the Executive Committee of the Maryland Agricultural and Mechanical Association.

Pursuant to notice, the Executive Committee met in special meeting. Present, Mr. Merryman, Chairman, Messrs. Bowie, Dougherty, Rogers, Whitman, Worthington and Ulery.

Upon motion made by Mr. Bowie, duly seconded, WILLIAM DEVRIES, Esq., was unanimously elected President of the Society, and the Chairman was directed to notify him of the same.

Mr. Rogers, from the committee to prepare a Charter, presented the Charter of the late Maryland State Agricultural Society, which, after discussion, he was directed to perfect and forward same to Col. Bowie, Senator from Prince George county, for presentation to the Legislature.

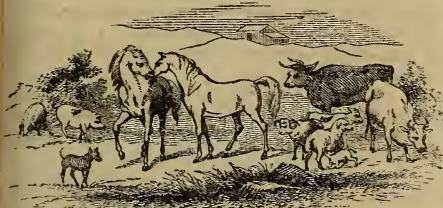
Upon motion, the Committee adjourned to meet at Annapolis on Wednesday, the 30th inst., for the purpose of urging the granting of the Charter by the Legislature.

B. H. WARING,
General Secretary.

PRACTICAL FARMER OF THE MIDDLE STATES, AND RURAL ADVERTISER.—We have received the first number of Paschall Morris' new Agricultural Monthly, bearing the above title. It contains 16 large quarto pages, well filled with useful and interesting matter, and is only \$1 per year. Address Paschall Morris, Philadelphia, Pa.

From E. Whitman & Sons, Baltimore, their Annual Descriptive Catalogue of Vegetables, Herb, Grass, Field and Flower Seeds. It contains practical directions for the cultivation and management of the vegetable garden. Send for a copy.

Live Stock Register.



Keep all the Stock you can.

The Massachusetts Ploughman in discoursing upon the above subject gives the following excellent and truthful remarks, which should be heeded by all our readers :

"There is no way to keep up a farm so readily, or so well, as by keeping all the stock it will fairly carry, in order to produce the largest possible amount of good manure. Something may be done with artificial manures to be sure, but they are to be considered rather as stimulants to the immediate crops, than as means of keeping up the permanent fertility and condition of the land. We believe in stocking a farm pretty nearly up to its utmost capacity. We do not mean by this to recommend a farmer to keep more than his farm will carry well, but to keep as much, and if he has to supplement a little, that is, to buy more or less grain or hay to help out a rather short crop, he had better do this than to sell his hay for want of stock enough to consume it. In other words, it is better to sell the produce of the farm on four legs, than to sell it in the form of hay and grain, unless he has some other and extraordinary means of supplying a full equivalent in the form of fertilizers, that will keep up the condition of the land.

We have seen hay sold in the barn in the country, within a week, at thirty-three dollars a ton, and that too, more than forty miles from Boston. Of course the temptation is very strong "to let slide" at such a price, rather than to feed it out to an ordinary stock of cattle. No one would pretend to say it is worth that money to feed to common stock. Cattle ought to be of a high and first rate quality to justify an expectation that it will pay that to feed out.—And yet it is probable that it will go higher instead of lower in the course of the winter. But we must look ahead a little and see where we are likely to land. Manure is high as well as hay, and when we begin to look about to see how we are to supply the place of a large heap of good barn yard manure in the spring it is not easy to tell how to do it at any reasonable price. The good farmers of Connecticut valley, many of whom we know personally, find it

for their interest to buy a large amount of stock in the fall, and to buy grain from the West at high prices to feed out to it for the sake of the manure.—They may lose on the stock. It may sell for less in the spring, or, at any rate, for little more than they paid for it in the fall. They look to the crop which they can produce with the manure, to take up any loss they may sustain on the stock, and having tried it year after year, they do not look in vain. They have learned to put confidence in manure, and every farmer who expects to prosper must learn the same lesson. Manure is the basis of the farmer's prosperity, and stock is the fertile source of manure.

It is, therefore, a short-sighted policy to sell hay if it is possible to consume it on the place with good, thrifty, growing stock. Much of the stock in our barns is not of this description, we are sorry to say. Some of it will pay and pay well. Some of it will consume a good deal of hay and not pay at all.—There is a vast difference between the two classes of stock in this respect. A cow that is really worth from seventy-five to a hundred dollars will pay better in the long run for the food she consumes than a cow that is really worth only forty or fifty dollars. In many cases a farmer had better pay even more than the higher price, than to take the lower priced animal as a gift. The percentage of profit on the one will be large, even with the present high prices of hay and fodder of all kinds. The other will pay no percentage whatever, and it may even cost about as much as she is worth to fatten her. What we need more than anything in our New England system of farming is a higher and more profitable class of stock. We are gradually coming to it. Twenty years of the present enterprise and spirit of improvement will make a great change, and the plan we suggested of stocking our state and town farms with pure bred stock will contribute more to bring about this result than any other that we can devise. Keep good stock, keep it well, and winter as much of it as you can winter well. It will pay better than to sell hay.

FATTENING CATTLE.—It is the common practice at the West, and probably elsewhere, to feed whole corn to cattle when up for fattening. Where there is a superabundance of corn this method of feeding may not be of much consequence, though the practice is a wasteful one. Corn meal is much preferable, as it saves the labor of the animal in grinding its own food. An ox will fatten a quarter faster on meal than on whole corn, while a less amount will be used in the process.

CONTRABAND'S VIEW OF A HORSE POWER.—Golly, said he, a hoss doin' de work, and riding he self.

Ladies Department.

THE GIRLS.

A PARODY ON "THE SNOW."

Oh! the girls, the beautiful girls,
With the liquid eyes, and the golden curls,
Sailing along through the crowded street,
Turning the heads of the youths they meet.
Tilting,
Ogling,

Skimming along,
Beautiful girls! they can do nothing wrong.
The blush of the rose on each soft dainty cheek,
In which lovely dimples play hide-and-go-seek.
Showing their ankles, and a little above,
Pure as an angel, fickle as love.

Oh! the girls! the beautiful girls,
How the boys gather, and sigh as each whirls
Her tilters along at a delicate height,
Just skirting the beauties forbidden to sight.

Tipping,
Laughing,
Hurrying by;
With a smile on the lip, and coy glance of the eye,
And the little dogs bark and with joyous bound,
Snap at the tilters that eddy around.
The town is alive, and each heart in a whirl,
To welcome the coming of each lovely girl.

How lovely they look as they teeter along,
Hailing each other with kisses and song,
And past a poor fellow, like meteors, flash by,
Bright for a moment, then lost to the eye.

Rigging,
Swinging,
Dashing they go,
Disregarding the breeze that plays havoc below.
With long floating trail, as pure as the sky,
To be tramped in the mud by the crowds rushing by;
To be tramped and tracked by dozens of feet,
Till it blends with the filth in the horrible street.

Once I tripped up on a tilter, and fell
Just as I passed a gaily dressed belle.
Fell, and my beaver rolled out in the street,
Fell to be scoffed at, and jeered at, and bent.
Scrambling,
Cursing,
Dreading to rise,
And afraid, of my soul, to open my eyes.
Above, and around me the broadest expanse
Of hoops that e're tilted in giddy round dance.
Wildly at last I darted without,
And dashed down the street, as the boys raised a shout.

Once I was green as the greenest of leaf,
Nothing too big to exceed my belief,
Every girl laughed at my innocent grace,
And vowed that I looked at naught else but her face.
Greenness,

Credulity,
Grace and all,
Shame and my blushes I lost by that fall.
I learn nothing new as the girls saunter by,
And tilter their hoops, no matter how high,
For all that's within or without I know.
Since I tripped on that tilter, and made such a go.

How strange if that patent heaving bosom of snow
Should fall at her feet on the pavement below,
How strange if that pile of tightly bound tresses
Should roll down her back from the head it depresses.

Fainting,
Freezing,
Rushing a head,
Unmindful of all save the beauties thus shed,
The tilters dropped off, and left far behind,
The little lace bonnet flying off in the wind,
But the worst of all mishaps! they do naught by halves.
How strange if in running, she'd drop her false calves.

W.

Louisville Gazette.

THE RUNAWAY MATCH.

A great many years since, when bright-eyed and fair-haired lasses were not so plenty in New York as they are now, there dwelt in the town of P—, a pretty village, distant then about five and twenty miles from "Market town," a peculiarly comely and graceful maiden who had a peculiarly ugly and cross-grained but wealthy father.

Minnie was Danforth's only child; and report says truly that she would be his only legatee. The old man was a sturdy farmer, and was estimated to be worth full ten thousand dollars, at that period, a very handsome fortune, to be sure.

The sparkling eyes and winning smiles of Minnie Danforth had stirred up the finer feelings of the whole male portion of the village, and suitors were numerous, but her father was particular, and none succeeded in making headway with him or her.

In the meantime Minnie had a true and loyal lover in secret. Who would have supposed for one minute that such a fellow would dare to look upon beauty and comparative refinement? His name was Walker, or, as he was generally called, "Joe"—Walker: and he was simply a farmer, employed by old Danforth, who had entrusted him with the management of his place for two or three years!

But a very excellent farmer and a bright, good manager, was this plain, unassuming but good looking Joe Walker.—He was young, too; only twenty-three, and had actually fell in love with the beautiful, pleasant, joyous Minnie Danforth, his old employer's daughter. But the strangest part of the occurrence was that Minnie returned his love earnestly, and truly, and frankly, and promised to wed him at the favorable moment.

Things went on merrily for a time, but old Danforth discovered certain glances and attentions between them, which excited his envy and suspicion. Very soon afterwards Joe learned the old man's mind indirectly, in regard to his future disposal of Minnie's hand, and he quickly saw that the case was a hopeless one, unless he resorted to stratagem, and so he set his wits to work.

By agreement, an apparent coolness and distance was observed by the lovers toward each other for five or six months, and the father saw, (as he believed,) with satisfaction, that his suspicions and fears had all been premature. Then, by agreement, also between them, Joe absented himself from the house on evenings, and night after night, for full three months longer, did Joe disappear as soon as his work was finished, to return home only at a late bed-time. This was unusual and old Danforth determined to know the reason of it.

Joe frankly confessed that he was in love with a man's daughter who resided less than three miles distant, but after a faithful attachment of several months, the old gentleman utterly refused to entertain his application for the hand of the young girl.

This was capital. Just what old Danforth most desired.—This satisfied him that he had made a mistake in regard to his own child, and he would help Joe to get married, and thus stop all further suspicions of trouble at home. So he said:

"Well, Joe, is she a buxom lass?"

"Yes, yes," said Joe. "That is for other folks to say; I'm not much of a judge myself."

"And do you like her?"

"Yes, sir—yes."

"Then marry her," said old Danforth.

"But I can't—the father objects."

"Pooh!" continued Danforth. "Let him do so; what need you care? Run away with her."

"Elope?"

"Yes. Off with you at once. If the girl will join—all right. Marry her, bring her here; you shall have the cottage

at the end of the lane; I'll furnish it for you; your wages shall be increased, and the old man may like it or not, as he will."

"But—"

"No buts, Joe, do as I bid you—go about it at once, and—"

"You will stand by me?"

"Yes, to the last. I know you, Joe. You're a good fellow and will make anybody a good son or husband."

"The old fellow will be very mad, though."

"Who cares, I say? Go on quickly and quietly."

"To-morrow night then," said Joe.

"Yes," said Danforth.

"I'll hire Clover's horse."

"No you don't."

"No!"

"I say no, take my horse—the best one, young Morgan; he'll take you off in fine style, with the new phaeton."

"Exactly."

"And as soon as you're spliced, come right back here and a jolly time we'll have of it at the old house."

"Her father will kill me."

"Bah! He's an old fool, whoever he is; he don't know your good qualities, Joe, as well as I do. Don't be afraid; faint heart, you know, never won a fair woman."

"The old man will be astonished!"

"Never mind, go on. We'll turn the laugh on him. I'll take care of you and your wife, at any rate."

"I'll do it," said Joe.

"You shall," said Danforth, and they parted in the best of spirits.

An hour after dark on the following evening, Joe made his appearance, decked in a new black cloth suit, and really looking very comely. The old man bustled out to the barn with him, helped to harness young Morgan to the new phaeton, and leading the spunky animal himself into the road, away went Joe Walker in search of his bride. A few rods distant from the house he found her, as per previous arrangement and repairing to the next village, the parson very quickly made them one in holy wedlock. Joe took his bride and dashed back to the town of A—, halted at old Danforth's house, who was already looking for him, and received him with open arms.

"Is it done?" cried the old man.

"Bring her in, bring her in," continued the old fellow in high glee; "never mind compliments, no matter about the dark entry; here, Joe, to the right, in the best parlor, we'll have a time now, sure!" and the anxious farmer rushed away for lights and returning almost immediately.

"Here's the certificate, sir," said Joe.

"Yes—yes."

"And this is my wife," he added, as he passed up his beautiful bride, the bewitching and lovely Minnie Danforth.

"What?" roared the old file. "What did you say, you villain, you scamp, audacious cheat!—you—you—"

"It is the truth, sir, we are lawfully married. You assisted me, you planned the whole affair, you lent me your horse, you thought me last evening worthy of any man's daughter, you encouraged me, you promised me the cottage at the end of the lane—"

"I didn't! I deny it! you can't prove it, you're a—a—"

"Calmly, now, sir," continued Joe. And the entreaties of a happy couple were united to quell the old man's ire, and to persuade him to acknowledge their union.

The father at length relented. It was a job of his own manufacture, and he saw how useless, finally, it would be to destroy it.

He gave it reluctantly, and the fair Minnie Danforth was overjoyed to be duly acknowledged as Mrs. Walker.

The marriage proved a joyful one, and the original assertion of old Danforth proved truthful in every respect. The cunning lover was a good son and faithful husband, and lived many years to enjoy the happiness which followed his runaway match; while the old man never cared to hear about the details of the elopement; for he saw how completely he had overshot his mark.

DOMESTIC RECIPES.

DIAMOND CEMENT.—This is a most excellent material for repairing broken china, ornaments, jewelry and nicknacks.—Take half an ounce of gum ammoniac and a tablespoonful of water; melt them together till they form a milky fluid. Then take one ounce of isinglass and six wineglassfuls of water; boil together till the quantity is reduced one-half; then add a glassful and a half of strong spirits of wine. Boil this mixture for three minutes, and then strain it through muslin, adding after, while hot, the ammoniacal fluid formerly made.—Finally, add half an ounce of tincture of mastic resin. The cement thus made is best preserved in small phials, in which it sets when cold. When required for use it can be liquified by placing the phial in a cup of boiling water.

HOW TO CLEAN RIBBONS.—A lady sends us the following receipt for cleaning ribbons, which she wishes published for the benefit of those of her sex who wish to try a successful experiment, as she has done. In these hard times all economical hints are acceptable. Wet the ribbon in alcohol, and fasten one end of it to something firm; hold the other in your hand, keeping the ribbon out straight and smooth; rub it with a piece of Castile soap until it looks decidedly soapy; then rub hard with a sponge, or, if much soiled, with the back of a knife, keeping the ribbon dripping wet with alcohol. When you have exhausted your patience and think it must be clean, rinse thoroughly in clear water, fold between cloths and rub it with a hot iron. Don't wring the ribbon; if you do, you will get creases in it that you cannot smooth out.—*Ex.*

TO WASH MERINOES.—An old merino dress may be made to look as good as new by first ripping to pieces the skirt, and afterwards washing each breadth separately, in warm suds, being careful to rinse only in clean warm water or suds. Cold water after warm will shrink any kind of woollen goods. Iron while quite damp on the wrong side. Afterwards fold once double on the right side; placing over it a clean newspaper, and iron with a very hot flat, in this way making the seam fold in all new double-fold goods.

SORE THROAT GARGLE.—Dissolve a small piece of alum in sage tea, then mix a little honey. Or 2 drachms of oak bark in 6 ounces of boiling water—use the liquid after it becomes cold, it is also very good.

CURE FOR CHAPPED HANDS.—Take 3 drachms of Gum Camphor, three do. white Beeswax, three do. Spermacetti, and two ounces Olive oil. Put them together in a cup on the stove, where they will melt slowly and form a white ointment in a few minutes. If the hands be affected, anoint them on going to bed, and put on a pair of gloves. A day or two will suffice to heal them.

RICE CAKES LIKE BUCKWHEAT CAKES.—Mix one fourth wheat flour to three fourths rice flour and raise as buckwheat flour, bake it like buckwheat cakes.—*Ger. Tel.*

ANTS.—A small quantity of green sage, placed in the closet, will cause red ants to disappear.

SODA BISCUIT.—3 tin cups of flour, 1 of lard, 1 of sweet milk, 1 teaspoonful of soda, 2 of cream tartar.

DROP GINGER CAKE.—1 pint molasses, 1 cup sugar, 1 of butter, 1 of thick milk, 6 of flour, 4 eggs, 1 teaspoonful of soda, ginger or spice to suit the taste; drop with a teaspoon an inch apart.

COCOAS.—1 cup sugar, 1½ of sour cream, 1 teaspoonful of soda, flour enough to make soft dough, grate half a nutmeg.

OMELET.—5 level tablespoonsful of flour, half pint sweet milk.

SPECIAL NOTICES.

John S. Reese & Co., South street, Baltimore, again present the claims of the Pacific Guano to the farmers and planters. We refer all interested in fertilizers to their advertisement. See also supplement on the same subject.

J. J. Turner & Co., 42 Pratt street, Baltimore, offer to farmers and planters their celebrated "Excelsior," which has steadily grown in favor with purchasers of manufactured fertilizers for several years. The attention of Planters is called to their advertisements.

Andrew Coe, Cincinnati, Ohio, offers to the farming public his Super-Phosphate of Lime, which he has lately improved and patented, and which he claims is equal, if not superior to any compound yet offered to the public, being a compound of raw, unfermented bone and blood and meat dried. Every 100 tons manufactured will be analyzed by Dr. A. Snowden Piggott, and published. We refer to his array of certificates published in our advertising columns. For sale by agents everywhere.

Herbert & Hairston, No. 10 Camden street, offer, as agents, *Andrew Coe's Super-Phosphate of Lime*, lately improved and patented. Every barrel is warranted. The ingredients are raw, unfermented bone and blood and meat dried, without any decomposition taking place.

John Saul, Washington City, D. C., offers for sale Fruit Trees, Plants, Vines, Seeds, &c.

Randolph Peters, Fruitland Garden and Nurseries, Newark, Delaware, offers for sale 200,000 Peach Trees, 100,000 Hale's Early, also other fruit trees, vines, evergreens, &c.

J. M. Thorburn & Co., 15 John street, New York, advertise their annual descriptive priced Catalogue of Kitchen, Garden and Agricultural Seeds for 1867—also, wholesale catalogue.

Edward J. Evans & Co., York, Pa., offer the New Brunswick Oats for sale.

James J. H. Gregory, Marblehead, Mass., offer to the public the Extra Early York Tomato—also Tilden's New Seedling Tomato.

James Pentland, Seedsman and Florist, 47 West Fayette street, Baltimore, offers to the public fresh and genuine Garden and Flower Seeds of the choicest kinds. He also supplies from his greenhouses, in quantity, roses, verbenas, dahlias, &c.

J. Burkholder & Wilson, Bendersville, Adams county, Pa., offer Grape Vines cheap, by the 100 or 1,000.

James Vick, of Rochester, N. Y., has just published his Illustrated Catalogue of Seeds and Floral Guide for 1867—price 15 cents. Send for a copy if you want to see something beautiful.

John Knaz, Pittsburg, Pa., offers a large stock of Vegetable and Flower Seeds of the best varieties. Also, by mail, a complete assortment of Grapes, Strawberries, Raspberries, Blackberries, Gooseberries and Currants. Examine his advertisements for details.

Blymyer, Norton & Co., Cincinnati, Ohio, offer to Sorgo growers, *pure Cane Seed*, of the several varieties, all of which was grown and the seed harvested by themselves. See advertisement.

J. M. Griffith & Co., 49 North Paca street, Baltimore, offer a large assortment of Seeds of every variety for spring planting. Also, Agricultural Implements and Machinery, among which are Reapers and Mowers, Horse Rakes and Sugar Cane Machinery, &c.

A. B. Farquhar, York, Pa., offers Agricultural Implements of all kinds to the trade and farmers.

A. & W. Denmead & Son, Monumental Iron Works, Baltimore, Md., builders of Stationary and Marine Steam Engines, Boilers, Tanks, Machinery, &c., &c.

Charles Fisher, 92 North Gay street, Baltimore, manufacturer and dealer in Stoves, Ranges, Tin Ware, Housekeeping Articles, &c.

William C. Stribling, Markham Station, Farquier county, Va., has for sale a Jack and two Jennets, or will exchange for other stock.

A Practical Farmer advertises for a situation as overseer or superintendent.

Norwood School.—The attention of parents and guardians is called to this School, located at Norwood, Nelson county, Va., and over which Wm. D. Cabel, Esq., presides, who is eminently qualified for the responsible position. He is assisted by a corps of competent teachers.

USEFUL RECIPES.

"BLOODY MURRAIN" is a disease which runs a fixed and determinate course, and is therefore best treated by good nursing and careful feeding. Give easily digested food of a laxative tendency, as small quantities of boiled barley, oats, bran mashes, linseed tea, &c. Small doses of Epsom salts should be given, combined with half-a-pound of molasses. If the animal becomes very weak, stimulants must be given as warm ale, one quart, in which is mixed one ounce each of gentian and ginger. Recovery is greatly expedited by a generous diet and mineral tonics, as sulphate of iron in one drachm doses twice a day.

A "HEAVY HORSE" cannot be cured, that is if the disease be confirmed. But by damping the food given to the animal, giving water only in moderate quantities, and working carefully, the symptoms may be kept under, so that the disease will not interfere much with the creature's usefulness.—*Canada Farmer*.

KIDNEY WORM—HOLLOW HORN.—A spoonful of spirits of turpentine rubbed on over the kidneys twice a day, and if the skin is rough and hard rub it first with a curry comb to open the pores. I have seen hogs that had been disabled three weeks, cured in three days by this treatment, and never heard of a failure. Spirits of turpentine is also a cure for hollow horn in cattle—no need of boring the horns: just pour a tablespoonful of the spirits in the hollow place on top of the head, for a few days, and all will be right. I think every farmer ought to know this.—*Cor. Ohio Farmer*.

HOW TO FEEL THE PULSE OF THE HORSE.—This is best felt where the artery passes over the edge of the jaw-bone. To find it, apply the fingers to the angle of the jaw-bone, and slowly pass them down to where a notch in the bone may be felt; the artery passes along this notch, where the throbbing will be perceptible. It is generally situated about three inches from the angle of the bone. In the horse the beats of the pulse are from 32 to 38 times a minute, in a state of health.

CURE FOR SPAVIN.—E. J. Bantz writes to the *Prairie Farmer*, that to cure a bone spavin the leg should be washed clean with soap and warm water, then clip off the hair and apply 1 oz. pulverized sal-ammoniac; 1 oz. gum camphor; 1 oz. Venice turpentine; 1 oz. tincture of cantharides; 1 oz. spirits ammonia; 2 oz. olive oil; twice per day and rub in thoroughly. Wash clean every fourth day, till well.

COUGH IN HOGS.—Keep your hogs dry and warm; feed with carrots, green feed, buttermilk, &c. Mix together, sal ammoniac, sublimed sulphur and black antimony, equal parts, and give twice daily amongst the feed or in gruel, a small tablespoonful for each hog.—*Prairie Farmer*.

LICE ON CALVES AND COLTS.—Take buttermilk and soft soap, and rub the mixture well into the hair of calves and colts, twice a week, and the lice will soon disappear.—*Cor. Rural American*.